Installation and operating manual

# MobiSet 2 digital

# CAP 600



KATHREIN

Antennen · Electronic

# CONTENTS

# FOREIGN LANGUAGE INSTALLATION MANUAL/DISPOSAL

Dear Customer, Chère Cliente, Cher Client, Gentile cliente, Estimado cliente,

## GB

You can obtain an English version of our installation instructions from our representatives in your country (http://www.kathrein.de/include/kontakte_groups_eng.cfm?kontinent=1&gruppe=SAT) or download one from our homepage (http://www.kathrein.de/en/sat/products/englisch.htm).

## F

Vous pouvez obtenir un manuel d'installation en français chez notre réprésentant en votre pays (http://www.kathrein.de/include/kontakte_groups_eng.cfm?kontinent=1&gruppe=SAT) ou le télécharger de notre page d'ouverture (http://www.kathrein.de/en/sat/products/franzoesisch.htm).

## I

Lei puo avvere la versione italiana delle istruzioni di montaggio dalla nostra rapresentanza (http://www.kathrein.de/include/kontakte_groups_eng.cfm?kontinent=1&gruppe=SAT) piu vicina della sua citta´, oppure scaricarla dalla nostra hompage http://www.kathrein.de/en/sat/products/italienisch.htm)

## E

Para obtener la versión española de nuestro manual de instalación, contacte nuestros representantes en su país (http://www.kathrein.de/include/kontakte_groups_eng.cfm?kontinent=1&gruppe=SAT) o bajela de nuestra página de Internet (http://www.kathrein.de/en/sat/products/spanisch.htm).

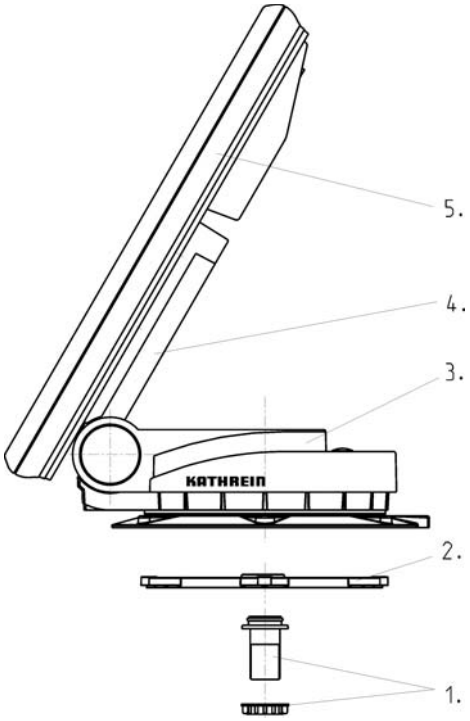
## DISPOSAL INSTRUCTIONS

Electronic equipment is not domestic waste - in accordance with directive 2002/96/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL dated 27th January 2003 on used electrical and electronic appliances, it must be disposed of properly.
At the end of its service life, take this unit for disposal to an appropriate official collection point.

**Used batteries are special waste!**
Do not throw spent batteries into your domestic waste; take them to a collection point for old batteries!

# MOBISET 2 CAP 600 COMPONENTS/SCOPE OF DELIVERY

1. Roof gland with retaining nut
2. Mounting plate
3. Turntable with integral controls
4. Antenna boom
5. BAS 60




UFS 740sw
(Front view)


See UFS 740sw operating manual for a rear view of the receiver together with explanation of functions and operating instructions.

## PRODUCT PACKAGE

The MobiSet 2 digital CAP 600 consists of:

- Turntable complete with control electronics, pre-assembled planar antenna with LNB
- Mounting plate
- Complete cabling set: 1 x coax cable 8 m long, and one power supply cable (10 m) for connection to the on-board power supply
- Roof gland with sealing gasket
- Sikaflex® 291 adhesive sealant (100 ml tube)
- UFS 740sw DVB-S receiver with connecting cables, infrared sensor and infrared remote control
- MobiSet 2 digital CAP 600 installation and operating manual
- UFS 740sw satellite receiver operating manual

# PROPER USE

## PROPER USE (USE FOR THE INTENDED PURPOSE)

The MobiSet 2 digital CAP 600 is designed to receive digital TV and radio programs via satellite. The automatic positioner is intended to be used as a turntable for the Kathrein satellite dish.
The turntable can be used to receive digital TV and radio signals in the frequency range from 10.70 to 12.75 GHz; the antenna cannot receive terrestrial signals (e.g. DVB-T).

**The turntable can only be used in conjunction with the UFS 740sw DVB-S receiver.**
In conjunction with this receiver, the turntable provides fully automatic alignment of the planar antenna to receive digital satellite signals. The turntable is designed for use on stationary caravans or motor homes.

**Any use other than that specified above will void the warranty or guarantee.**

**The following circumstances result in the loss of all warranty and liability claims towards the manufacturer:**

- Improper installation
- Use of non-specified mounting materials, which cannot guarantee the mechanical reliability of the antenna system
- Non-permissible use, e.g. use of the planar antenna for storage
- Structural changes or interference with the components and mounting accessories in the set, which could endanger both the mechanical and functional reliability
- Improper or forcible opening of the components
- Use of cleaners containing solvents, such as acetone, nitro-cellulose combination thinners, petrol etc.
- Failure to observe installation and safety instructions in this manual

**Note:** *The maximum permissible speed for vehicles with a CAP 600 receiver unit mounted on the roof is 130 km/h. Before commencing a journey, the satellite dish must always be lowered into horizontal position (park position).*

**The turntable may be operated in an ambient temperature range of -10 °C to +40 °C. Operating the system outside this range may result in malfunctions or damage to the system. When choosing the location for installation or raising the UFS 740sw, ensure there is adequate ventilation.**

## The system may only be installed by qualified specialist personnel!

**To prevent hazards during installation, operation or when driving on public highways, the instructions and information in this manual must be strictly adhered to. Proper installation and connection of the system are pre-requisites for conformity with the corresponding standards. This is documented in advance by the CE mark and the declaration of conformity in the appendix to this manual.**

# SAFETY INSTRUCTIONS - IMPORTANT NOTES

## Safety during installation work

When carrying out installation work in locations where there is a risk of falling, take appropriate safety precautions, e.g. use of a working platform. Make sure that the vehicle roof is sufficiently strong and stable to carry out the installation work (risk of damage or collapsing of roof).
In case of doubt, contact a qualified specialist dealer or the manufacturer of your vehicle to find an appropriate installation location.

Make sure that:

- The turntable and connected units are disconnected from the power supply
- The person carrying out the installation or repair does not suffer from vertigo and can move around safely on the roof of the caravan or motor home
- The person carrying out the repairs is wearing sturdy and non-slip shoes
- The person carrying out the installation or repair has a secure position to stand and hold on while working
- The roof and the climbing equipment used (e.g. ladder) are dry, clean and non-slip
- The roof can withstand the weight of the person carrying out the repairs

  **Caution! Risk of death or injury due to falling or the roof collapsing!**

- Nobody should be inside the caravan/motor home underneath the antenna during dismantling/ installation

  **Caution! Risk of death or injury due to possible roof collapsing and falling parts!**

## Proper installation and safety

**Fundamental information**
A crucial safety factor is proper performance of installation and electrical connection work, and the specified alignment of the turntable in the direction of travel (park position), see also installation and connection.
Heed as precisely as possible the installation conditions and steps described.
Modifications to the electrical installations in the vehicle should only be carried out by a specialist in vehicle electrics. Do not make any unauthorised changes to the turntable.

**Adhesive sealant**
The turntable is attached to the roof of the vehicle by adhesive and is secured by additional screws.
Note that the curing of the adhesive sealant is temperature-dependent. It reaches its full strength only after approximately five days.

**During installation work, comply strictly with the processing and safety instructions for the adhesive sealant (Sikaflex® 291 safety data sheet and Sikaflex® 291 technical data sheet).**

# SAFETY INSTRUCTIONS - IMPORTANT NOTES

**Road Traffic Licensing Regulations (StVZO)**
The applicable regulations of the StVZO must be observed in respect of fixed installation of the turntable on a vehicle which is driven on public highways.
In particular, §§ 19/2; 30 C; 32 (2) and the EC directive 74/483 EEC are applicable.
Briefly, they state that no endorsement of the vehicle documentation is required unless the antenna unit causes the height of the laden vehicle to exceed 2 m, or the antenna unit projects beyond the outer lateral outline of the vehicle. The maximum permissible height of 4 m (vehicle and antenna unit) may not be exceeded.

**There is an increased risk of accidents if the normal vehicle height is increased by extending the antenna. The driver bears sole responsibility for the condition of the superstructure and external fittings!**

**Cables**
Lay all cables such that nobody can tread on them or trip over them.To prevent parasitic induction or interference emissions, when extending the antenna cable use 75 Ω coaxial cable with a screening factor of at least 75 dB.

**If you tied the cables together with wire or similar materials, remove this to prevent the risk of fire!**

When connecting the power cables (receiver and turntable) to the vehicle electrical supply, make sure that the cable polarity is not reversed.

**If the cable polarity is reversed there is a risk of thermal overload and damage to components when the equipment is powered up!**

## Power supply, fusing

Operate the system from your vehicle's battery (12 V) or a suitable power supply unit. This power supply unit must ensure a stable output voltage of 12 V, continuous current of 11 A and 15 A (300 ms) surge current. The transient power consumption is up to a maximum of 12 A.

To ensure reliable functioning of the connection/control unit, the power supply cable must be connected directly to the battery. If the supply voltage is too low, the UFS 740sw receiver indicates this with the on-screen message “On-board voltage too low” on the television screen.

A 15 A fuse is incorporated in the power supply cable. If the fuse blows, rectify the source of the fault and replace the blown fuse with a fuse of the same rating (15 A).

**Never remove or bypass the fuse in the cable – cable fire hazard!**

Connecting the power supply cable lead marked “Ignition” activates the turntable function for automatic lowering of the antenna. This lowering takes place as soon as the vehicle ignition circuit is turned on. When connecting the control unit to the vehicle power supply, make sure that the “+12V”, “Earth” and “Ignition” wires cannot be interrupted by intermediate switches, as this could deactivate the automatic lowering function.

# SAFETY INSTRUCTIONS - IMPORTANT NOTES

**The antenna will be lowered within 12 seconds of the ignition being switched on (if the unit is in stand-by mode or the UFS 740sw is switched off). Otherwise the control unit that is in use is lowered immediately.**

**Attention: Lowering the antenna can take up to 30 seconds after the ignition is switched on!**

## Checks before commencing a journey

- Before commencing a journey, the antenna must always be lowered into horizontal position (park position). If the antenna has collided with a fixed or movable object, check that it is still securely attached.
- As the antenna is subjected to vibration loads during driving, at regular intervals, depending on the frequency of driving, you should check that the system is still securely fitted and tighten any parts that have come loose.
- The maximum permissible speed for vehicles with a receiver unit mounted on the roof and the antenna lowered is 130 km/h.
- Lower the antenna if it will not be used for a long period. This makes the securing bolts more difficult to access (protection against theft).

## Safety precautions during installation

During installation of the turntable, make sure that no persons, in particular children, are in the immediate vicinity of the turntable and that they cannot touch any moving parts – danger of crushing!

Always unplug the power supply during installation work.

## Antenna in the park position whilst driving

The antenna must always be lowered into horizontal position (park position) while driving.

As a reminder, please attach the sticker from the supplementary sheet “Lower the CAP 600 antenna while driving” where it can easily be seen by the person operating the ignition switch.


**Risk of accidents due to exceeding normal vehicle height by failure to lower antenna! The driver is responsible for the condition of external fittings on the vehicle!**

**In addition the instructions in the installation and operating manuals for these devices and for the attachments and superstructures must be complied with at all times!**

**If stormy weather is expected, the turntable must always be moved to the park position, otherwise both the CAP 600 and the vehicle may be damaged.**

# INSTALLATION AND CONNECTION

## REQUIRED TOOLS AND EQUIPMENT

- Circular cutter, Ø 38 mm
- Flat-bladed screwdriver for M5 screws
- Power drill
- Galvanised round head screws, depending on the roof structure (Ø: 5 mm, sheet metal screws D 7981, depending on the roof structure) or round head screws D 7985 with washers and nuts
- Twist drill, Ø 2.5 or 5.5 mm
- Round file and/or emery paper
- Cleaning agent
- Open-ended or ring spanners 10 and 11 mm across flats
- Knife
- Cross-head screwdrivers for M3 and M5 screws
- Torque wrench capacity 6 to 11 Nm
- Hexagon socket key (5 mm)
- Two wooden beams for supporting the turntable

## UNPACKING AND PREPARATION

Keep the device in its cardboard box for transport on to the vehicle roof. Only take the turntable out of its packaging when it is on the vehicle roof. Retain the original packaging, as if it is necessary to send the unit for repair transport damage cannot be ruled out and the manufacturer accepts no liability for possible damage.

Loosen the six fastening screws (width A/F: 10 mm). Carefully lift the turntable off the mounting plate and place it on the prepared wooden supports. Make sure that the cables are not crushed where they emerge from the underside of the turntable.

## SELECTING THE INSTALLATION LOCATION

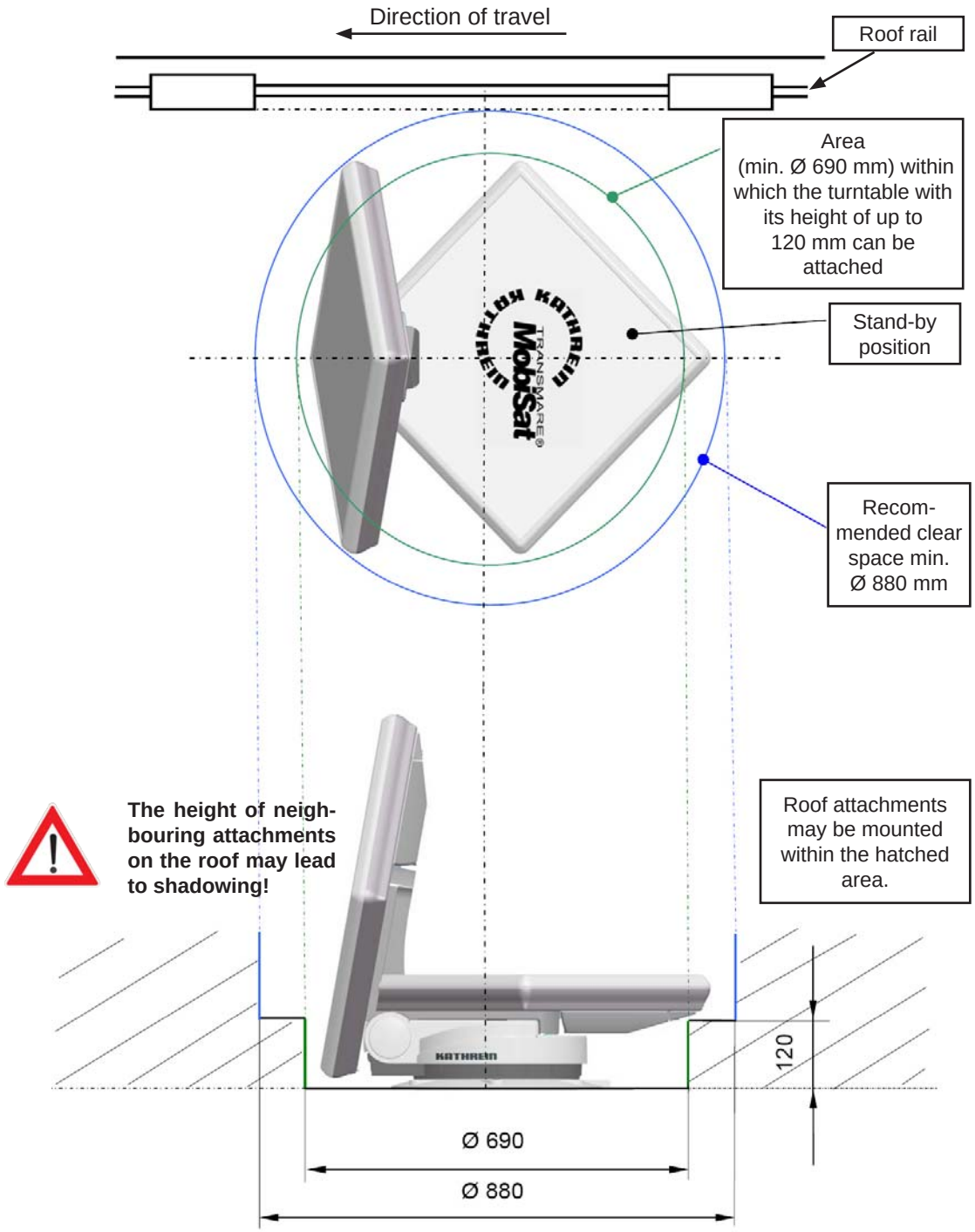
Essentially, the cable lengths of the MobiSet 2 CAP 600 components allow you a free choice of installation location on your caravan or motor home.

However, you should take note of the following points:

- Before installation, you should find out whether the operating manual for your vehicle permits the fitting of non-vehicle specific parts or what requirements need to be met in order to do so.
- For direct satellite reception, there should not be any obstructions between the antenna and the satellite. Therefore, make sure that the antenna is not shadowed by roof extensions such as luggage racks, air conditioning units, solar panels, etc. The problem of shadowing applies also to the selection of the parking place for your vehicle. For interference-free satellite reception, the antenna needs a projected free view to the South at an angle of between 15° and 55° (depending on location) to the horizontal.

# INSTALLATION AND CONNECTION

- When selecting the installation position, take into account the range of movement of the turntable (see graphics and the “Technical Data” chapter). There must be no structures on the roof that would obstruct this range of movement (risk of collision). For safety, keep at least the required area free (for ease of installation and any subsequent dismantling).



# INSTALLATION AND CONNECTION

- Choose an installation position on the roof that is as horizontal as possible or only slightly sloping, depending on the location of the vehicle, since roof inclinations greater than 5° may lead to problems when searching for the satellite.
- To ensure secure adhesion, the height difference of the roof curve may not be more than 1 cm over a length of 2 m, as otherwise the gap between the roof and the mounting plate would be too big to be filled by the adhesive sealant.
- As the vehicle is constantly subjected to vibration loads during travel, the roof below the antenna unit is also subject to significant loads. Please note given the nature and capacity of your vehicle roof (see also operating manual for the vehicle) that the weight of the antenna unit is approx. 13.8 kg. In case of doubt, consult a qualified dealer or your vehicle's manufacturer.
- The roof gland provides a watertight seal through which the two connecting cables (coax cable and power supply cable) are fed into the interior of the vehicle directly underneath the turntable. If you prefer a different method of laying the cables, they can be run from the rear of the turntable via the channel provided in the mounting plate. The cables must then be run along the roof of the vehicle in a protected cable duct (not supplied).

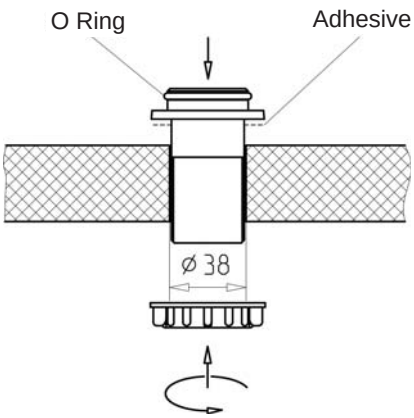
**Note:** *Do not cut the cables, as otherwise the proper functioning of the unit can no longer be guaranteed.*

## INSTALLATION STEPS

### INSTALLATION OF CABLE GLAND AND MOUNTING PLATE

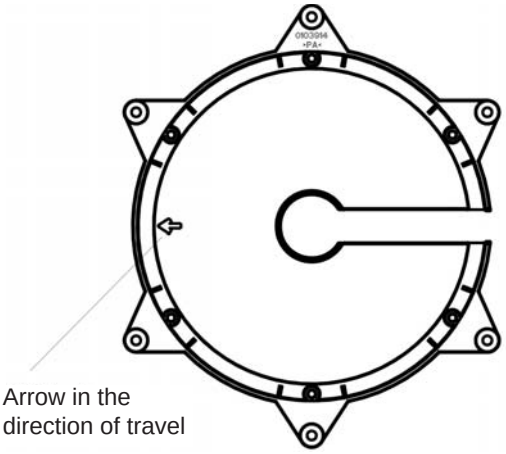
Comment: If you had previously used a Kathrein HDM140/141 flexible satellite mast or another mast with a diameter of 34 mm, you can continue using the existing gland hole in the roof (if space allows).

Figure: **A**




- In the centre of the intended position of the turntable, drill the opening for the cable gland with a circular cutter (Ø: 38 mm). Deburr the hole with a round file or emery paper.
- Provisionally insert the roof gland into the drilled hole (Fig. A).
- Place the mounting plate on the roof of the vehicle, such that the centre hole is positioned centrally to the cable gland. The **arrow symbol** must be visible from above and point **forwards in the direction of travel** (Fig. B).

Figure: **B**




- Mark the positions of the six fastening holes on the roof of the vehicle in a circular pattern.

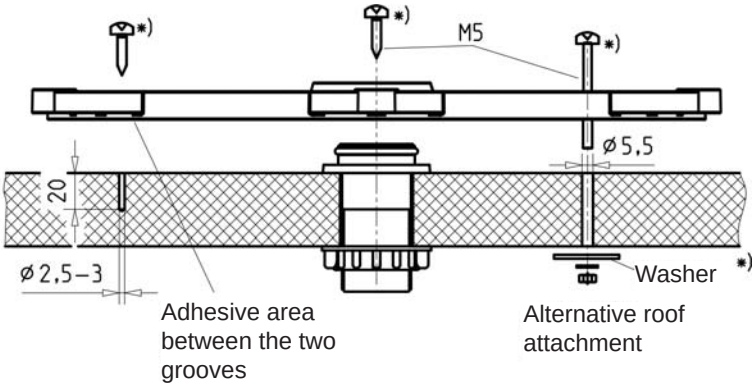
Note: *The size of the holes and the choice of fastening screws to be used (not supplied) depend on the type and thickness of the materials used in the roof structure. If the roof panelling (plastic roofs) is sufficiently strong, it is recommended that round head screws, plain washers and self-locking nuts are always used to secure the glued mounting plate.*

- For very thin roof panel materials and insufficient support in the insulating material, through holes (Ø: 5.5 mm) into the interior of the vehicle are necessary; galvanised M5 round head screws of sufficient length should then be used.

  Make sure that you use a sufficiently strong support that can accept the screw tensile forces (large plain washers or a complete reinforcing plate).

Figure: **C**

*) Not included



# INSTALLATION AND CONNECTION

- Create the holes necessary to secure the mounting plate (Fig. C).

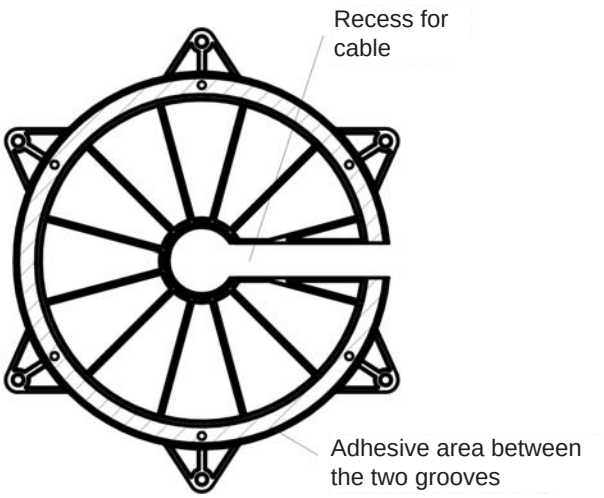
- In addition to the screwed connection, the mounting plate and roof gland must be bonded to the roof with adhesive and sealed. This is done using the Sikaflex® 291 adhesive sealant supplied, which is ideally suited for this purpose due to its broad range of adhesion.

**Before starting to use Sikaflex® 291 adhesive sealant, be sure to read the Sikaflex® Products safety data sheet and technical data sheet in this installation manual!**

The prerequisite for good adhesive properties is a clean, dry and grease-free substrate. You should therefore clean the roof surface with a suitable cleaning agent within a circumference of 17 cm around the drilled hole and allow the surface to dry thoroughly.
If the surface is painted, ensure that the paint finish is sufficiently well bonded to the substrate.
If the coat of paint is already loose or peeling, it must be removed down to a stable layer in the area to which the adhesive will bond. If you have any doubts concerning the adhesive characteristics, consult a paint and lacquer specialist, or the manufacturer of your vehicle.
Under certain circumstances, it may be necessary for you to improve the adhesive characteristics of the roof surface by pre-treatment with a cleaning agent available from specialist dealers (e.g. Sika® Cleaner) or a primer (e.g. Sika® Primer).

The procedure for gluing the mounting plate is as follows:

Figure: **D**



# INSTALLATION AND CONNECTION

- Ensure before starting adhesive work that the temperature of materials to be glued and the adhesive sealant is between +5 °C and +40 °C. Prepare all necessary fasteners and tools.
- Prepare the tube of adhesive sealant in accordance with the instructions enclosed with the tube.
- Remove the roof gland (Fig. A) and apply the adhesive sealant evenly to the underside of the roof gland flange.

  Replace the roof gland in the drilled hole and press it firmly against the roof of the vehicle.
- Apply the adhesive sealant evenly to the underside of the mounting plate, completely covering the area within the circular groove (Fig. D).

  This area of the vehicle roof must be completely coated with adhesive in order to achieve the necessary bonding force.

  Place the mounting plate on the roof of the vehicle, as you did previously when marking out the drilled holes.

  Make sure that the arrow on the mounting plate points forward in the direction of travel.

  The fastening holes must be perfectly aligned with the prepared holes in the roof.
- Fasten the mounting plate in place with the prepared screws, evenly tightening six screws across the diagonals.

Note: *The adhesive sealant used is capable of bridging small gaps caused by the curvature of the vehicle's roof. However, you should ensure that the mounting plate is not bent by tightening the screws.*

- Remove any adhesive sealant that leaks out at the sides with a clean cloth or if necessary with Sikaflex® Remover (available from specialist dealers). Do not use cleaning agents or thinners containing solvents, as this could damage the adhesive sealant applied under the mounting plate. Use only cleansing paste and water to clean your hands.
- Secure the cable gland from inside the vehicle by tightening the knurled nut supplied (Fig. A).
- Note that the curing of the adhesive sealant depends on the ambient temperature and the humidity. Final strength is reached after approx. five days. However, it is possible to carry out further installation work with no problems, as the mounting plate is held in place by the tightened screws.

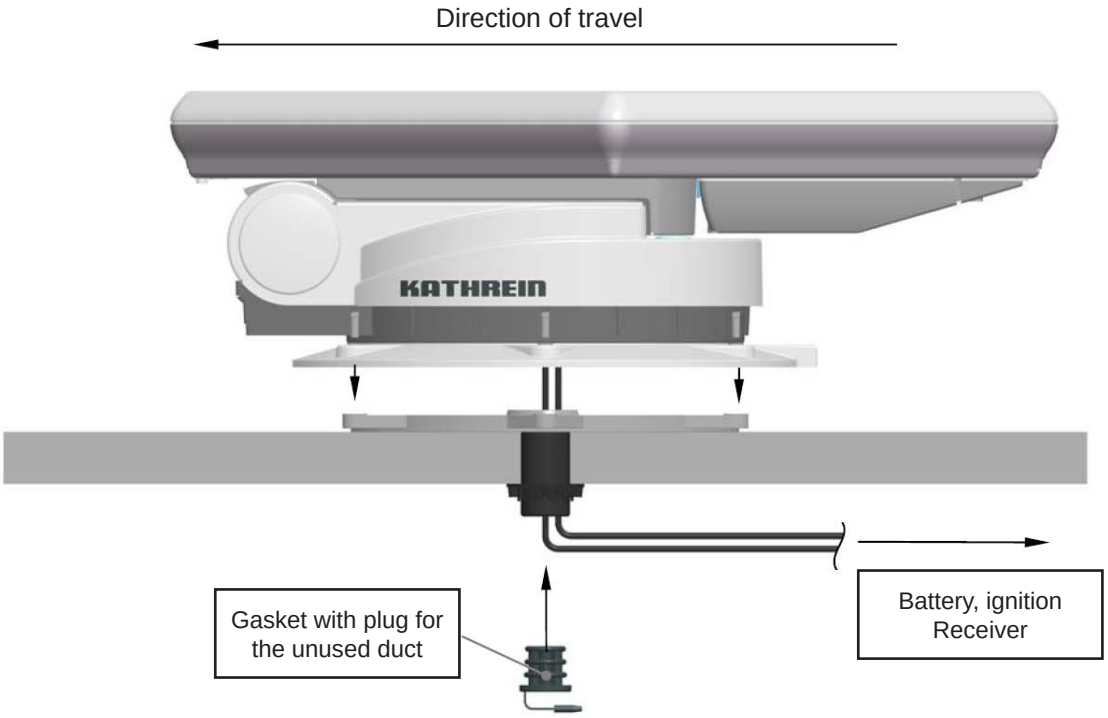
## INSTALLATION OF TURNTABLE

VARIANT WITH CABLE GLAND UNDERNEATH THE TURNTABLE

- Feed the ends of the cables with the connectors as far as possible through the cable gland into the interior of the vehicle.

# INSTALLATION AND CONNECTION

Figure: **E**




- Lift up the turntable and place it carefully on the mounting plate facing in the direction of travel (see illustration Fig. E) (do not step on the plug connector and do not kink/crush the cables!).

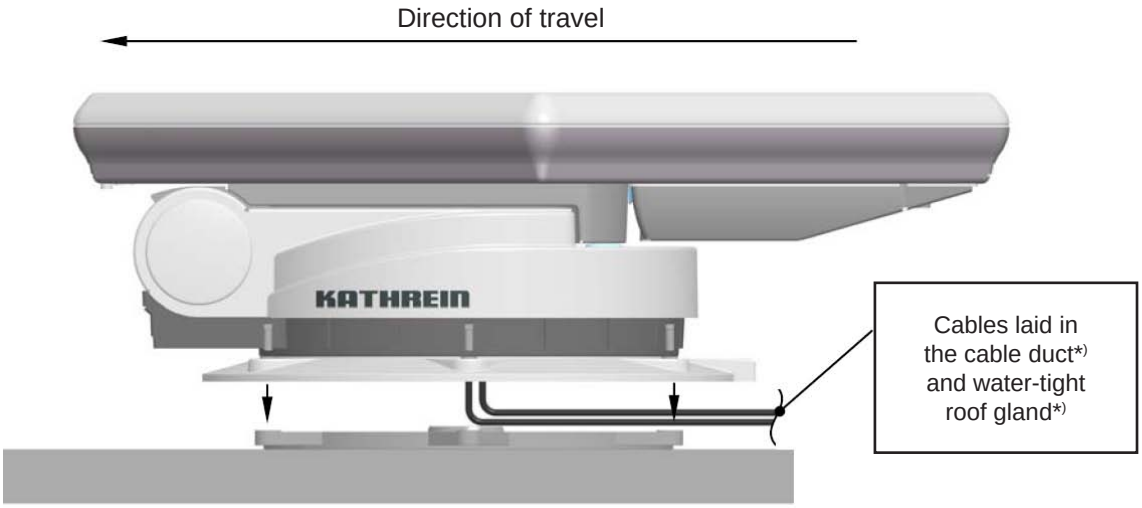
  The through holes on the turntable must be perfectly aligned with the threaded holes on the mounting plate. When lowering, make sure that the cables are fed through the cable gland and are not crushed.

- Apply a little adhesive sealant to the six threaded holes in the mounting plate and screw the fastening screws into the thread. Tighten the screws to a torque of 6 Nm.

- To prevent water vapour from inside the vehicle reaching the turntable through the roof gland, thread the two cables through the sealing gasket supplied (see Fig. E) and insert this into the roof gland until it reaches the stop. Insert the plug into the third cable duct which is not used. Make sure that no tensile loads are acting downwards on the sealing gasket as this can cause it to fall out over time.

# INSTALLATION AND CONNECTION

VERSION WITH EXTERNAL CABLE GLAND (FIG. F)




*) Not included! Watertight cable ducts are used in boating and yachting applications under the name “cable ports”; they can be purchased from boating and yachting chandlers.

- The external cable gland should not be so far from the turntable that the junction between the two cables projecting from the turntable and the extension cables cannot lie within the interior of the vehicle.
- Arrange the cables in the cable duct when placing the turntable on to the mounting plate. Make sure that the cables are not crossed over and that they are taut so that they cannot be crushed. Do not try to pull the cables from the unit. This could damage the cables or loosen the cable connections.
- Place the turntable carefully on the mounting plate. The through holes on the turntable must be perfectly aligned with the threads on the mounting plate.
- Apply a little adhesive sealant to the six threaded holes in the mounting plate and screw the fastening screws into the thread. Tighten the screws to a torque of 6 Nm.
- The connecting cables should be fed[1)] into the interior of the vehicle through a waterproof cable gland. In so doing the cables may not be crushed, kinked or damaged.

[1)] These watertight cable glands are used in boating and yachting applications under the name “cable ports”; they can be purchased from boating and yachting chandlers.

# INSTALLATION AND CONNECTION

## BRIEF INSTRUCTIONS FOR INSTALLING THE TURNTABLE

The sequence of pictures shown illustrates all the necessary installation steps that are required to install the turntable and the BAS 60 planar antenna on the roof of the vehicle.

The other detailed instructions in this installation and operating manual must also be followed!

For ease of illustration, we have dismounted the BAS 60 on these photographs. As supplied, the BAS 60 is pre-assembled to the turntable.

Determination of installation location.
Important! System has a turning range of 96 cm (Ø). Drill hole with Ø 38 mm. Deburr sharp edges of hole.

Apply Sikaflex® 291 adhesive to the roof gland. Insert the spigot into the hole and secure it from below with the knurled nut.

Unscrew screws (6 x, 10 AF) from the mounting plate and remove the mounting plate.

Place the turntable on prepared wooden supports to protect the roof of the vehicle.

# INSTALLATION AND CONNECTION

Aligning the mounting plate. Arrow in the direction of travel. Mark out the six holes for securing the mounting plate.

Apply Sikaflex® 291 adhesive in a wavy line between the two grooves and spread it using a spatula or the like. **Avoid skin contact!**

Place mounting plate on roof gland and secure with appropriate screws (choose screws according to thickness/structure of roof).

Screw turntable on to mounting plate using torque wrench.
**Caution!**
**Tightening torque: 6 Nm**

Making the electrical connections. Connect the UFS 740 receiver. Connect the turntable to the battery.

**The antenna must always be lowered into horizontal position (park position) while driving!**

**Maximum driving speed of the vehicle: 130 km/h**

# INSTALLATION AND CONNECTION

## INSTALLATION OF THE UFS 740SW RECEIVER

The turntable is controlled by the UFS 740sw DVB-S receiver.
The cable lengths must be taken into account when choosing the installation location. For suspended installation use the installation kit supplied with the receiver.

Note: *When choosing the installation location, bear in mind that the on/off switch and the slots for inserting common interface modules should always be accessible. The UFS 740sw is equipped with a power saving circuit and a separate infrared transmitter, which means that the unit does not need to be placed where it is visible. You can therefore fit the UFS 740sw out of sight in any location, e.g. on cupboard walls, side walls or the base of storage compartments.*

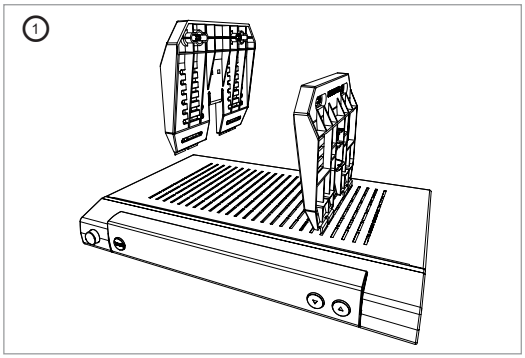
In addition, the following points should be taken into account:

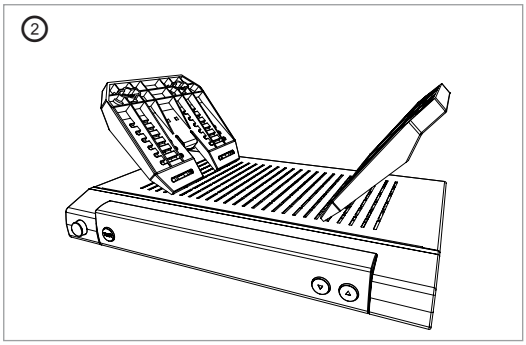
- The wall thickness at the installation location must be at least 12 mm, as otherwise the screws will break through on the other side or damage the surface
- The receiver must be placed in such a way as to allow sufficient air circulation behind, above and next to the unit (installation using the installation kit ensures this). Installation on carpet-covered walls is therefore unsuitable
- Ensure that the cupboard or storage compartment in which the unit is housed is adequately ventilated, to prevent a build up of heat
- Take care when tightening the screws not to damage any cables etc. behind or in the wall
- The receiver is designed for installation in exclusively dry, interior locations. The installation location must be protected against moisture
- The connecting cables must be provided with strain reliefs

**The receiver must be connected to no other power supply than 12 V DC. The receiver's earth connection must be connected to the negative pole of the motor home or caravan battery.**

## SUSPENDED INSTALLATION

# INSTALLATION AND CONNECTION



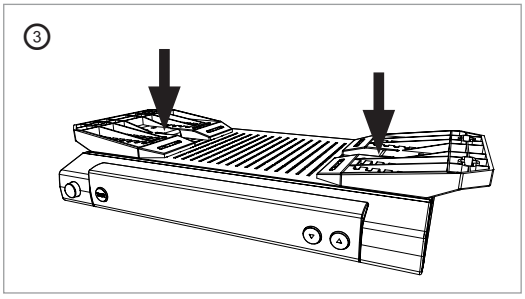



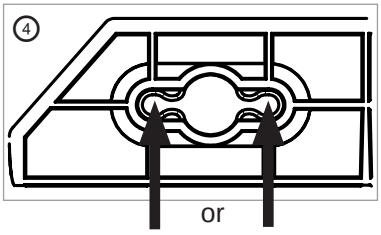

Remove the wood screws supplied from their transport attachment on the underside of the respective mounting piece (2 pieces).

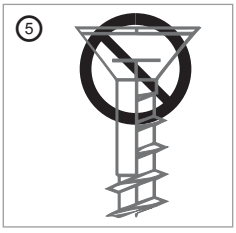
Vertically insert each mounting piece into the fifth slot from the edge, as shown in Fig. 1.

Then push each mounting piece downwards and outwards (see Fig. 2) until they lie flat on the receiver casing (see Fig. 3).

Now press the mounting pieces firmly against the receiver casing at the points shown arrowed in Fig. 3), until the catch audibly snaps home in the receiver casing.




Now hold the receiver, with the installation kit attached, at the installation location. Screw in the wood screws supplied, through the smaller positions in the screw attachment area (4 x) (see Fig. 4). Wherever possible, use the wood screws supplied. If these are unsuitable, other screws of adequate size and strength can be used. **Under no circumstances however use countersunk wood screws, since these can damage the attachment area (see Fig. 5).**

Then screw all four screws fully home, so that the installation kit is no longer able to work loose.

## INSTALLATION ON A FIXED FLAT SURFACE

So as to prevent the receiver slipping or falling, the installation kit can also be attached to the underside of the receiver. Assembly is the same as for suspended installation, except that the installation kit is hooked into the underside of the receiver.

# INSTALLATION AND CONNECTION

## LAYING CABLES AND CONNECTING THE TURNTABLE

- Lay the coaxial cable to the UFS 740sw.
- Lay the turntable power supply cable (3-pin plug) to the battery.

  **Avoid laying the cables across sharp edges and secure the cables against possible chafing points.**

- Connect the coaxial cable (coming from the turntable) to the “IF IN” F socket on the rear of the UFS 740sw.
- Place the infrared sensor for the receiver close to or directly on top of the TV set and lay the cable to the UFS 740sw. Connect the 6-pin Western connector at the rear to the socket marked “IR REMOTE IN”.

Note: *Lay the AV cinch enclosed with the CAP 600 to the Scart cable. Take great care to plug the cables into the correct sockets! The cinch connector must be assigned to the UFS 740sw and the Scart connector to the TV set.*
*Reversal is not possible - unit will not function!*

## CONNECTING TO THE UFS 740SW

Isolate the on-board power supply (master switch “off” or disconnect negative pole of on-board power supply battery) before commencing the following work:

- Connect the power cable supplied (depending on the power supply available in your motor home or caravan, either a 12 V supply or a 230 V supply via a power supply unit) to the “12V ⎓ /2,5A” socket on the receiver.

  Make sure that the “inline” integrated fuse (5 A) of the cable is fully plugged in and is intact. If the fuse blows, the source of the fault must first be eliminated. The fuse must only ever be replaced by a fuse with the same rating (5 A).

The fuses in the cable and in the receiver may never be bridged – cable fire hazard!

- At the connecting point for the power cable, the voltage must not fall below 10.9 V even with a load of 12 A. Otherwise optimum functioning can no longer be guaranteed.
- Connect the power cable to the respective socket in your motor home or caravan (12 V or 230 V).

# INSTALLATION AND CONNECTION

Only for connection in a motor home, not in a caravan!

- The third, green connecting cable, marked “IGNITION” allows you the option of connection to a circuit in the vehicle that is activated when the ignition key is turned and then carries a continuous 12 V supply. This type of connection ensures that when the engine is started the antenna is automatically lowered into the park position (the receiver does not need to be turned on).
- Check the connections before you re-connect the on-board network.
- For commissioning and more detailed information on additional operator functions, we refer you to the separate operating manual enclosed.

## FUNCTIONAL INSTRUCTIONS FOR CONNECTION TO THE ON-BOARD POWER SUPPLY

Under certain circumstances, problems can arise when the units are connected to different connecting sockets or circuits/earth potentials. If none are available, it is recommended that you connect the connecting sockets for receiver and TV set to the same cable, as depicted in Figure “G”. The current rating of the circuit used must be checked with respect to the intended application.

Further information on operating the UFS 740sw receiver can be found in the operating manual supplied with the unit.

# INSTALLATION AND CONNECTION

## CONNECTION EXAMPLE FOR 12 V BATTERY CONNECTION

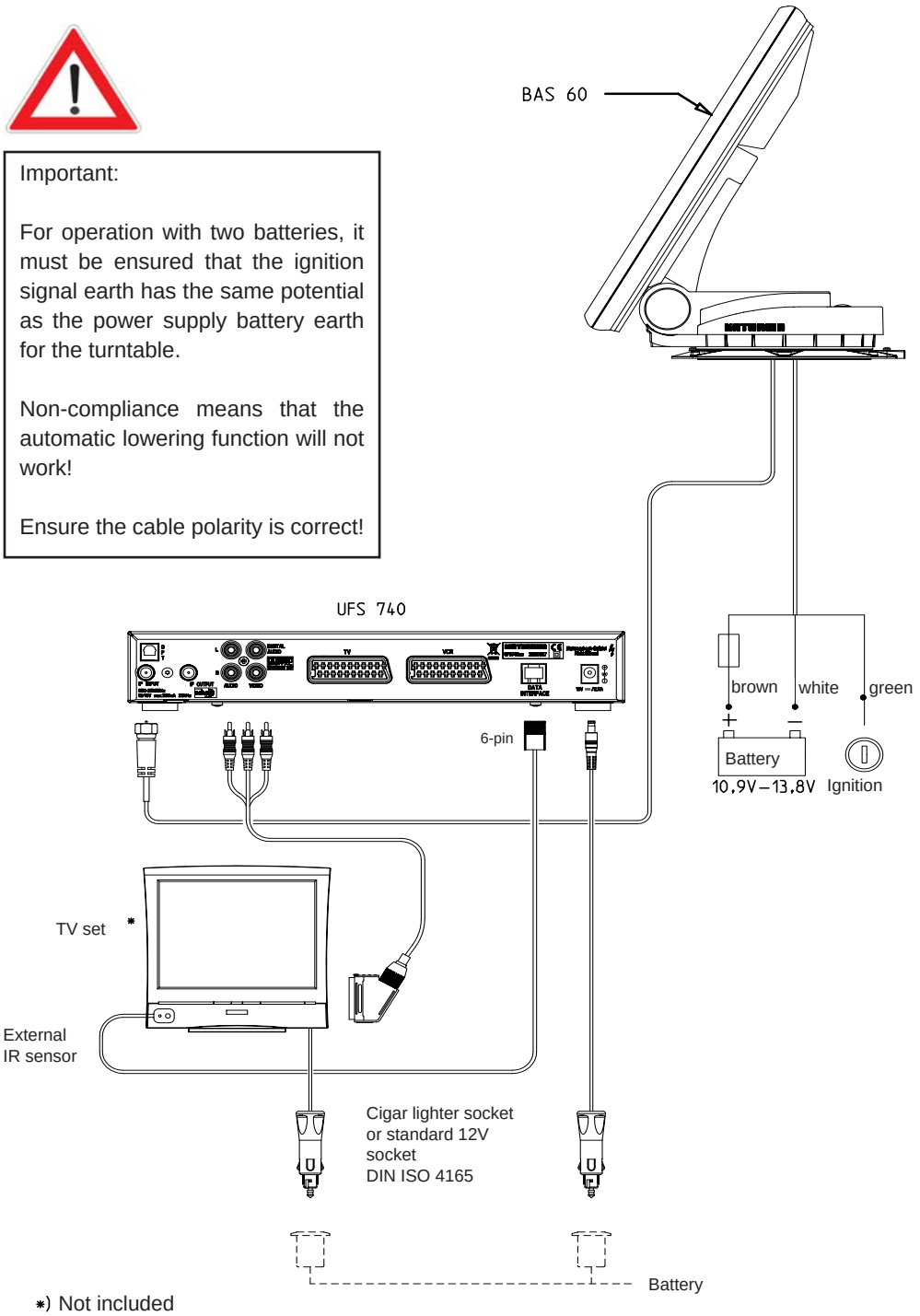
Figure: **G**

Important:

For operation with two batteries, it must be ensured that the ignition signal earth has the same potential as the power supply battery earth for the turntable.

Non-compliance means that the automatic lowering function will not work!

Ensure the cable polarity is correct!

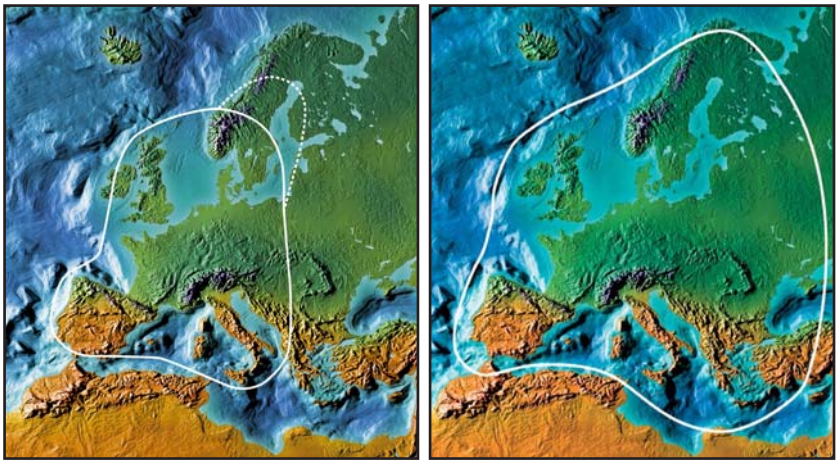



*) Not included

# RECEPTION RANGE/FOOTPRINT

The footprint is the reception area on the earth that a satellite covers with its transmission beam (spot), within which satellite reception is possible. The transmission power is at its greatest in the centre of this spot – it becomes progressively weaker moving outwards.
You should preferably align your antenna to the position of the ASTRA satellite 19.2° East (picture below left), EUTELSAT/HOTBIRD 13° East (picture below right). The spots for these satellites are shown below.

The inner line of the footprint here shows the area covered with digital signals by the ASTRA satellites.
The outer (dashed) line of the footprint displayed here shows the area that is covered by individual Astra satellite. Therefore, within this footprint not all programmes are available.



The satellites broadcast the various channel packages in different footprints. Within these, the respective channel packages can be received with good video and audio quality. In the marginal zones reception is possible, although the quality of the signals received can vary considerably.

# DISMANTLING FOR SERVICING

If repairs to the system or individual components are necessary, contact your specialist dealer or our service centre (see below for address).

**Never open the turntable yourself!**

## DISMANTLING

- **Do not cut the cables! At the cable junction provided, disconnect the cables projecting from the turntable from the two cables laid within the interior of the vehicle (unplug the plug).**

- The cables laid within the vehicle can remain there
- Unscrew the six M6 screws securing the turntable to the mounting plate
- Place two wooden supports on the vehicle roof, for protection
- Then place the turntable on the prepared wooden supports
- To ship the turntable, use the original packaging which you have saved
- Seal the opening in the vehicle roof appropriately to protect against the ingress of moisture

Note: *Before exchanging the UFS 740sw, first move the turntable to the park position.*

## ADDRESS OF THE SERVICE CENTRE

**ESC**
**Electronic Service Chiemgau GmbH**
Bahnhofstraße 108
83224 Grassau, Germany

Phone: +49 8641 9545-0
Fax: +49 8641 9545-35 and -36
Internet: http://www.esc-kathrein.de
e-mail: service@esc-kathrein.de

## POLARISATION SETTING

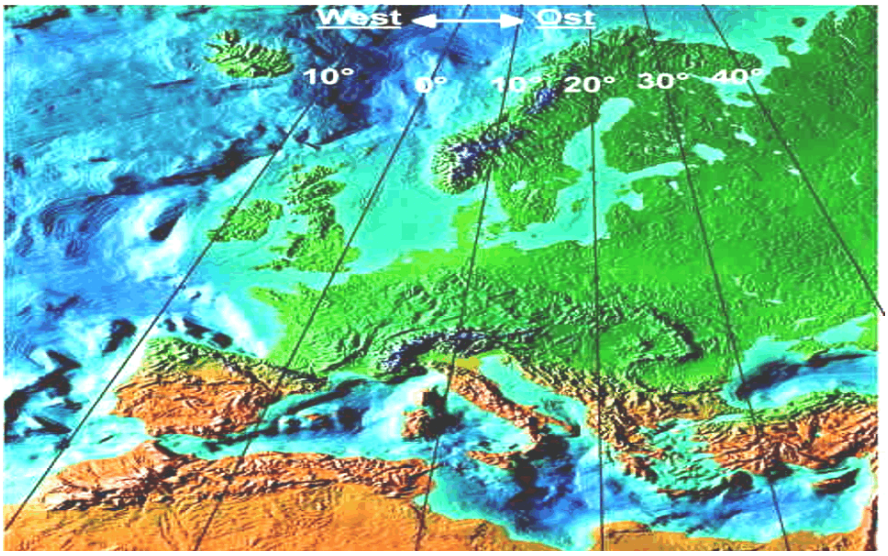
As supplied, the BAS 60 is mounted centrally on the turntable. In this position, you can also receive signals from satellites with deviations in the degree of longitude (of the typical reception range) of between 15° and 20° from the orbit position of the satellite. Deviations in the preferred reception range degree of longitude or more than 15-20° from the orbit position of the satellite allows the BAS 60 polarisation setting to be changed by changing the installation position.

**However, we expressly draw attention to the fact that positioning the BAS 60 antenna at a deviation of +15° or -15° from the centre position only makes sense if a satellite to the far West or the far East is actually preferred for reception.**

+15° if the satellite is more than 15° to 20° to the west of the preferred reception area and -15° if the satellite is more than 15° to 20° to the east of the preferred reception area.
The overview below shows the recommended BAS 60 installation position for selected locations and typical satellites. This overview does not constitute a guarantee of reception of all channels from the satellites listed here.

| *Satellite* | | HISPASAT | HOTBIRD 13° East | ASTRA 19.2° EAST | ASTRA 28.2° EAST EUROBIRD 28.5° East | TÜRKSAT 42° East |
|---|---|---|---|---|---|---|
| *Location* | *Longitude* | | | | | |
| **Belgrade** | **20° East** | +15 | 0 | 0 | 0 | |
| **Bordeaux** | **0°** | +15 | 0 | 0 | -15 | 15 |
| **Cagliari** | **10° East** | +15 | 0 | 0 | 0 | -15 |
| **Diyarbakir** | **40° East** | | | | | 0 |
| **Hamburg** | **10° East** | +15 | 0 | 0 | 0 | -15 |
| **Istanbul** | **30° East** | | 0 | | | 0 |
| **Kiev** | **30° East** | | 0 | | 0 | |
| **Kiruna** | **20° East** | | 0 | 0 | 0 | |
| **Krakow** | **20° East** | +15 | 0 | 0 | 0 | |
| **Lisbon** | **10° West** | +15 | -15 | -15 | -15 | |
| **London** | **0°** | +15 | 0 | 0 | 0 | -15 |
| **Milan** | **10° East** | +15 | 0 | 0 | 0 | -15 |
| **Odessa** | **30° East** | | 0 | | | |
| **Oslo** | **10° East** | +15 | 0 | 0 | 0 | |
| **St. Petersburg** | **30° East** | | 0 | 0 | | |
| **Tirana** | **10° East** | +15 | 0 | 0 | 0 | |
| **Tralee** | **10° West** | +15 | 0 | -15 | -15 | -15 |
| **Valencia** | **0°** | +15 | 0 | 0 | -15 | |

# POLARISATION SETTING




## SAFETY NOTES

**We strongly advise that users who are not familiar with the installation work should not reassemble the BAS 60 independently. They should contact a technician or engineer. They may find a suitable person on the campsite.**

Make sure that:

- The antenna and connected units are disconnected from the power
- The person carrying out the installation does not suffer from vertigo and can move around safely on the roof of the caravan or motor home
- The person carrying out the repairs is wearing sturdy and non-slip shoes
- The person carrying out the repairs has a secure position to stand and hold on while working
- The roof and the climbing equipment used (e.g. ladder) are dry, clean and non-slip
- The roof can withstand the weight of the person carrying out the repairs

**Caution! Risk of death or injury due to falling or roof collapsing!**

- No persons, especially small children, should be in the immediate area of the turntable and touch movable parts during dismantling/installation of the planar antenna. Nobody should be inside the caravan/motor home underneath the antenna during dismantling/installation.

**Caution! Risk of death or injury due to possible roof collapsing and falling parts on the motor home/caravan!**

**Continue to heed the “Safety Instructions - Important Information” section!**

**No impediments may be in the turning range (see “Safety Instructions - Important Information”)!**

# POLARISATION SETTING

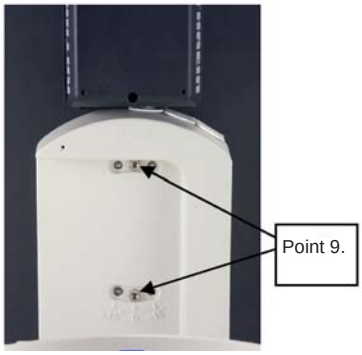
## INSTALLATION PROCESS

**The explanation of this installation process is based on the assumption that the entire CAP unit has been properly put together, installed and set up, as described in this installation manual. The safety instructions in the detailed operating manual for the UFS 740sw must also be followed!**

To dismantle/install the planar antenna from the turntable, proceed as follows: (the key names refer to the remote control for the UFS 740sw receiver)

1. Turn on the receiver at the main switch on the front of the unit.
2. Pressing any of the numeric buttons will bring the receiver into operating mode.
3. If necessary, first perform a first installation
4. Wait until the message “Position of Astra is not known. Start a search?” is displayed – cancel this procedure by pressing the EXIT button.
5. Next, press the MENU button to go to the main menu and use the ▼▲ buttons to move to the menu item “Settings”. Confirm the selection by pressing the OK button.
6. Use the ▼▲ buttons to move to the menu item “Antenna Configuration”. Confirm the selection by pressing the OK button.
7. Use the ▼▲ buttons to select the Elevation menu item and use the numeric pad on the remote control to enter “400”.
8. Press the OK button and the turntable will move to the selected elevation angle.
9. Turn off the UFS 740 using the main switch on the front and disconnect it from the power.
10. Unscrew the antenna fastening screws on the turntable with a suitable hexagon key (size 5), see photograph on the right.
11. Carefully lift the antenna off the turntable and exchange the slot for the rubber bushing with cable and the relevant dummy bushing (depending on the direction you want to move the antenna).

**ON THE TURNTABLE**




12. You can now refit the antenna with the desired change of angle (+15° or -15°) (see picture on the right).
13. Tighten the hexagon socket screws to a torque of 6-7 Nm.
14. Leave the installation location and reconnect the UFS 740sw to the power supply.

# POLARISATION SETTING

15. Switch the receiver on firstly with the main switch and then with any of the numeric buttons.
16. You will then see the message “Please wait, initialising HDP”. Wait until the message “Position of Astra is not known. Start a search?” is displayed – cancel this procedure by pressing the EXIT button.
17. Next, press the MENU button to go to the main menu and use the ▼▲ buttons to move to the menu item “Settings”. Confirm the selection by pressing the OK button. Use the ▼▲ buttons to move to the menu item “Antenna Configuration”. Confirm the selection by pressing the OK button.

18 Use the ▼▲ buttons to move to the menu item “Reset the motorised antenna”. Confirm the selection by pressing the OK button. Once the antenna has been reset, you can return to the normal TV picture by pressing the EXIT button.

**View after installation +15°**

**View after installation in the middle (standard)**

**View after installation -15°**

# MANUAL LOWERING TO PARK POSITION

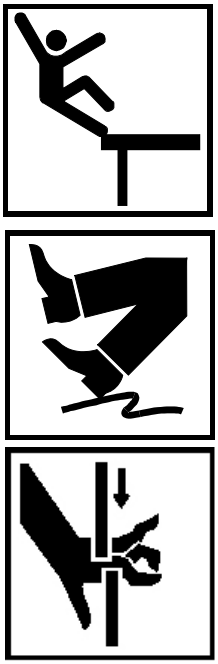
If a defect arises in the electronic controls, after some disassembly work the satellite dish can be returned to the park position (horizontal position) manually. Following this however recalibration by an authorised workshop is always necessary.

**Driving to the nearest workshop with the antenna extended at a moderate speed and taking into account the increase (+ 72 cm) in the vehicle height is an option and is preferable to manual lowering.**

**Users who are not familiar with the necessary repair work are urged not to manually retract the antenna into park position themselves. They should contact a technician or engineer. They may find a suitable person on the campsite.**

In any case, the safety instructions listed below must be followed.

## SAFETY NOTES



Make sure that:

- The antenna and connected units are disconnected from the power
- The person carrying out the repair does not suffer from vertigo and can move around safely on the roof of the caravan or motor home
- The person carrying out the repairs is wearing sturdy and non-slip shoes
- The person carrying out the repairs has a secure position to stand and hold on while working

- The roof and the climbing equipment used (e.g. ladder) are dry, clean and non-slip

- The roof can withstand the weight of the person carrying out the repairs

**Caution! Risk of death or injury due to calling or roof collapsing!**

- Do not hold onto the antenna, as the rocker comes free without warning during dismantling

**Caution! Risk of death and injury due to falling or crushing!**

- Nobody should be inside the caravan / motor home underneath the antenna during dismantling/installation.

**Caution! Risk of death or injury due to possible roof collapsing and falling parts!**

# MANUAL LOWERING TO PARK POSITION

## MANUAL LOWERING


1. In the centre of the antenna (arrowed) there is a plastic cap. Lever this off with a narrow slot-head screwdriver.

2. Behind the cap is an M8 hexagon head screw. Unscrew these using a 13 mm socket wrench.

After removing the M8 screw, a further thread can be seen.

3. Attention! Secure and support the antenna to prevent it tipping over. The connection to the rocker can suddenly come loose during the next step (item 4). It is then no longer connected to the turntable!

4. Screw an M12 screw into this thread (minimum length: 22 mm). You will need a socket wrench for this (size: 19 mm). Screwing in the M12 screw pushes the rocker off the tapered shaft and releases the engagement.

   **Attention: Insert the screw only as far as necessary to free the rocker from engagement on the tapered shaft!**

5. Tilt the antenna into the park position (horizontal position).

6. Remove the M12 screw. This allows the rocker to re-engage on the tapered shaft.

7. Replace the M8 screw and tighten it.

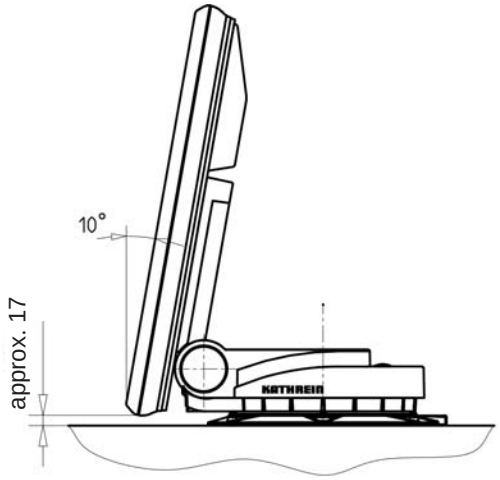
8. Replace the plastic cap.

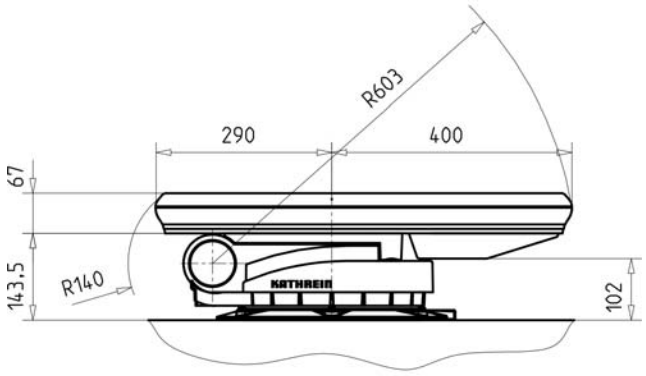
Loosening the rocker from the taper shaft causes the rocker zero point position to be lost. When the authorised dealer rectifies the defect he will recalibrate the rocker!

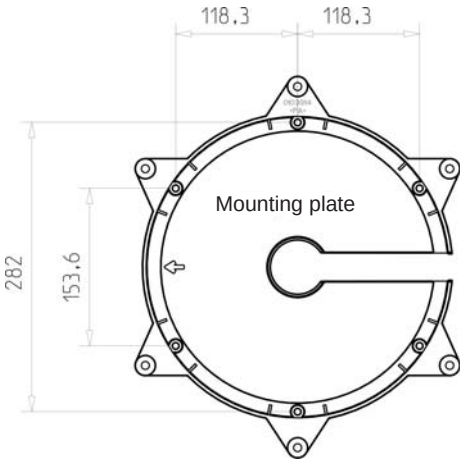
9. Consult an authorised dealer.

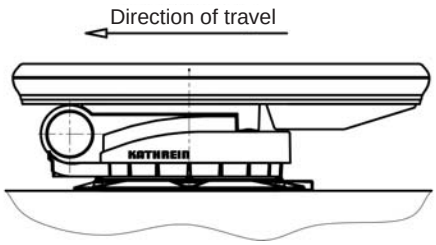
# TECHNICAL DATA

## DIMENSIONS (MM)

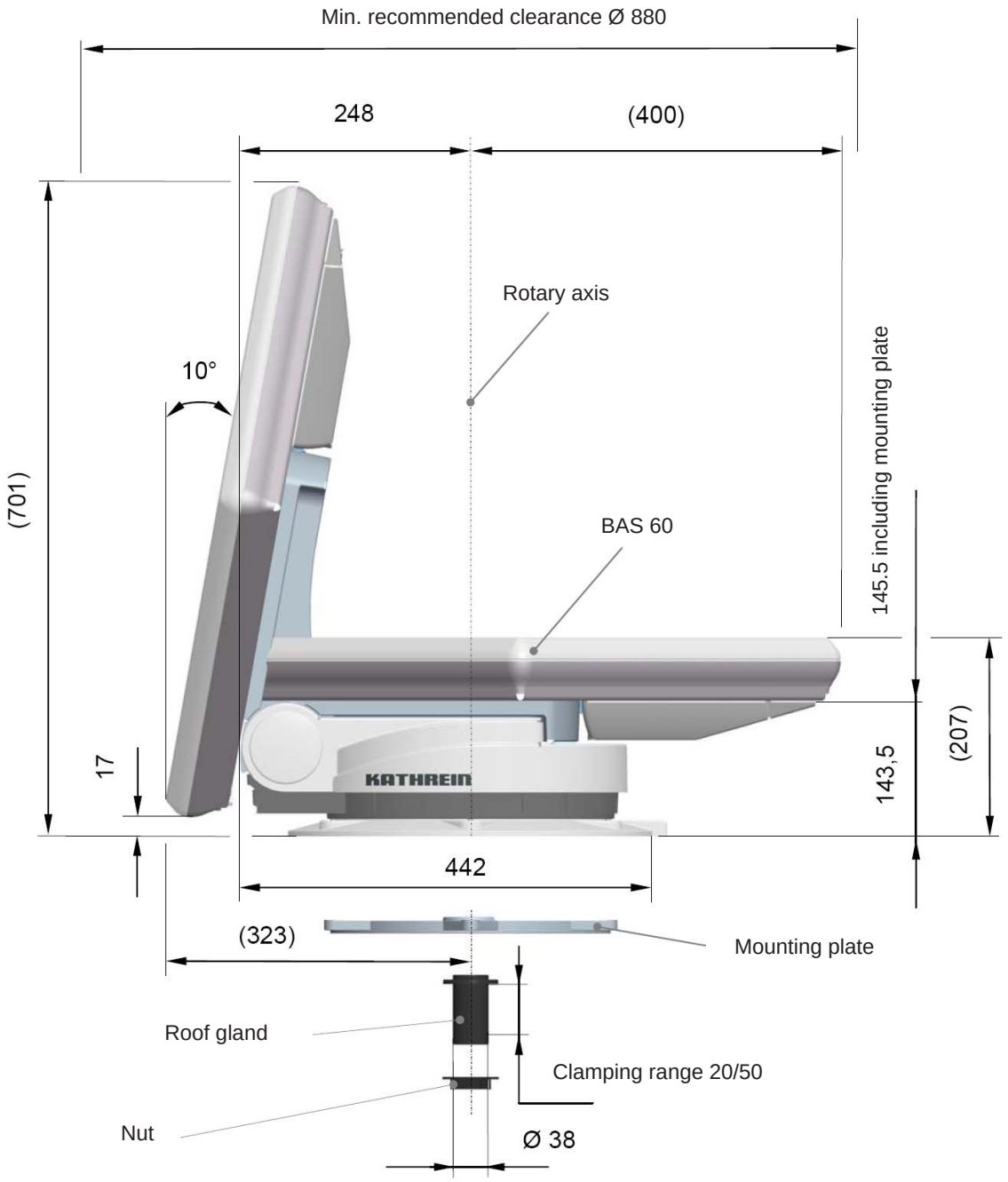


# TECHNICAL DATA




Weight incl. BAS 60: approx. 13.8 kg

# TECHNICAL DATA

| Type | | CAP 600 |
|---|---|---|
| Order no. | | 20310018 |
| LNB | | 1 output switchable: V/H (14/18 V), low/high (0/22 kHz) |
| LNB supply voltage | V | vertical: 11.5-14, horiz.: 16-19 |
| Input frequency | GHz | 10.70-12.75 |
| Output frequency | MHz | 950-1950/1100-2150 |
| Oscillator frequency (L.O.) | GHz | 9.75/10.60 |
| System quality (G/T) 11.3/12.5 GHz | dB/K | 13.3/13.7 |
| Power supply (vehicle battery) | V | 10.9-13.8 |
| Power consumption from the 12 V vehicle electrical system:<br>- Inrush current<br>- Satellite search<br>- TV reception<br>- Stand-by | A | <br>Typ. 10, max. 12<br>Typ. 3<br>Typ. 1.2<br>Typ. 0.024 |
| Current consumption from the receiver | mA | Typ. 160 |
| Setting range:<br>- Elevation<br>- Azimuth<br>- Skew | ° | <br>0-80<br>370<br>-15/0/+15 |
| Weight | kg | 14.5 |
| Packing unit/weight | pc./kg | 1/23.4 |

| | |
|---|---|
| Ignition signal | 12…24 V |
| Search time for first satellite | (typ.) 10…120 s |
| Search time for further satellites | (typ.) 2…30 s |
| Search time for LSM (Last Satellite Memory) | 2…15 s |

# SIKAFLEX® 291 SAFETY DATA SHEET

**1. Materials/preparation and company designation**

| | |
|---|---|
| Data on the product (trade name): | Sikaflex® 291 |
| Data on manufacturer/suppliers | |
| Manufacturer/suppliers: | Sika Deutschland GmbH |
| Street/postcode: | Kornwestheimer Str. 103-107 |
| Postcode and town: | Stuttgart |
| Country: Germany | |
| Tel: | +49 711 80090 Fax: +49 711 8009321 |
| General information: | Product safety |
| Emergency information hotline: | +49 173 6774799 only outside office hours |

**2. Composition/data on components**

Chemical characterisation: Filled reactive PUR polymer

Hazardous contents (designation to 67/548/EEC)

| CAS-No. | Concentration | Danger symbols | R phrases | EC no. |
|---|---|---|---|---|
| Naphtha (crude oil), hydro-desulphurised heavy | | | | |
| 64742-82-1 | 1 - 2.5 % | Xn,N | 10,65,51/53,66,67 | 265-185-4 |
| 4,4‘ methylene-diphenyl-diisocyanate | | | | |
| 101-68-8 | 0.1 - 1 % | Xn | 20,36/37/38,42/43 | 202-966-0 |
| Xylol | | | | |
| 1330-20-7 | 1 - 2.5 % | Xn | 10,20/21,38 | 215-535-7 |

**3. Potential hazards**

Hazard designation:
Xn Hazardous to health
Special hazard instructions for human beings and the environment
42 Sensitisation possible by breathing in.

**4. First Aid measures**

General instructions
In all cases show the doctor the safety data sheet.
After breathing in
In the event of trouble consult a doctor.
After contact with the skin
After contact, wash the skin with soap and water.
In the event of continuing skin irritation consult a doctor.
After contact with the eyes
In case of contact with the eyes, wash with copious water for 15 minutes.
Summon a doctor immediately.
After swallowing
Do not induce vomiting. Summon a doctor immediately.

**5. Measures for fire fighting**

Suitable extinguishing media

Compatible with all extinguishing media in general use.

Special hazard from the product, its products of combustion or gases released

In case of fire the following can be released: Carbon monoxide (CO)
Carbon dioxide ($CO_2$)
Hydrogen chloride (HCl)
Oxides of nitrogen ($NO_x$)

Additional instructions

Combustion residues and contaminated extinguishing media must be disposed of in accordance with the local authority regulations. Collect contaminated extinguishing water separately, do not allow it to run into the drains.

**6. Measures if inadvertently released**

Personal precautions

Ensure sufficient ventilation.
Wear protective clothing.
Where vapours/dust/aerosols are present, wear a breathing mask.

Environmental protection measures

Do not allow to run into the drains or bodies of water.
In the event of penetration into water, ground or drains, inform the responsible authorities!

Procedure for cleaning/clearing up

Absorb with media that bind to liquids (e.g. sand, sawdust, universal binding media. Dispose of the material that has been cleared up in accordance with the chapter on Disposal.

**7. Handling and storage**

Handling

Instructions for safe handling: Refer to Chapter 8 / Personal protective equipment.
Instructions for fire and explosion prevention: Not applicable

Storage

Requirements for storerooms and containers:
Containers should be dry, kept tightly sealed and stored in a cool, well ventilated place.

Storage proximity instructions

Store separately from all kinds of foodstuffs.

Additional instructions for storage

Protect against frost.
Protect against heat and direct sunlight.
Protect against atmospheric humidity and water.

*** 8. Exposure limitation and personal protective equipment**

Components subject to monitoring of workplace concentration limits

| Designation of the component<br>CAS no. | type | | Reference/country/year |
|---|---|---|---|
| Naphtha (crude oil), hydro-desulphurised heavy | | | |
| 64742-82-1 | Permissible workplace concentration | 350 mg/m³ | TRGS 900/DE/2004 |
| 64742-82-1 | Permissible workplace concentration | 70 ml/m³ | TRGS 900/DE/2004 |



*) Markings (*) in the left margin indicate revisions from the previous version.

4,4‘ methylene-diphenyl-diisocyanate

| | | | |
|---|---|---|---|
| 101-68-8 | Permissible workplace concentration | 0.05 mg/m³ | TRGS 900/DE/2004 |
| 101-68-8 | Permissible workplace concentration | 0.005 ml/m³ | TRGS 900/DE/2004 |

Xylol

| | | | |
|---|---|---|---|
| 1330-20-7 | Permissible workplace concentration | 440 mg/m³ | TRGS 900/DE/2004 |
| 1330-20-7 | Permissible workplace concentration | 100 ml/m³ | TRGS 900/DE/2004 |
| 1330-20-7 | EU-TWA (8h) | 221 mg/m³ | 2000/39/EC |
| 1330-20-7 | EU-TWA (8h) | 50 ml/m³ | 2000/39/EC |
| 1330-20-7 | EU-STEL (15‘) | 442 mg/m³ | 2000/39/EC |
| 1330-20-7 | EU-STEL (15‘) | 100 ml/m³ | 2000/39/EC |

Personal protective equipment

General protective and hygiene measures
Ensure sufficient ventilation at the workplace.
Avoid contact with the eyes and skin.
Apply prophylactic skin protection by protective hand cream.
Take off soiled clothing immediately.
Do not smoke, eat or drink when handling the product.
Before breaks and after completing work, wash hands well.
Breathing protection
When ventilation is poor: ABEK multi-range filter
The gas filter class is dependent on the local concentration of injurious substances.
Hand protection
Wear butyl rubber/nitrile rubber gloves
Eye protection
Safety glasses
Body protection
Work clothing

*** 9. Physical and chemical characteristics**

Appearance

| | |
|---|---|
| Form: | pasty |
| Colour: | various, depends on the pigment |
| Smell: | characteristic |

Safety-relevant data, methods

| | |
|---|---|
| Flashpoint: | > 65 °C |
| Density at 20°C: | approx. 1.26 g/cm³ |
| Solubility in water: | reacts with water |
| Viscosity at 20°C: | not applicable |
| VOC (solvents): | 3.47 % |
| VOC (CH): | 3.47 % |

**10. Stability and reactivity**

Substances to be avoided/hazardous reactions

No hazardous reactions if correctly stored and handled.

Thermal decomposition and hazardous products of decomposition

No decomposition if used correctly.

**11. Toxicology data**

Sensitisation

Sensitisation/allergic reactions may occur.

Sensitive individuals may exhibit allergic reactions even at very low concentrations.

Experience of human exposure

| | |
|---|---|
| On skin contact: | May lead to irritation |
| On eye contact: | May lead to irritation |
| On being breathed in: | May lead to irritation |
| On being swallowed: | May lead to health problems |

**12. Ecological data**

Additional instructions

Do not allow to run into the drains, bodies of water or the ground.

**13. Disposal instructions**

Product

Recommendations

In accordance with the applicable waste labelling regulations, waste should be classified by its origin. Therefore a unique waste code number cannot be assigned.

Packaging

Recommendations

Packaging that is empty of residues should be sent for recycling. Packaging that contains residues of hazardous substances or which is contaminated with hazardous substances, and any packaging that is not empty of residues should be disposed of as the product, correctly and without creating pollution.

If the last contents makes it necessary, packaging that is empty of residues must be pre-treated for disposal (e.g. washed out, neutralised, cured, shaken out).

**14. Transport data**

ADR/RID

Further data

Not hazardous cargo.

IMO/IMDG

Marine pollutant: no

Further data

Not hazardous cargo.

IATA/ICAO

Further data

Not hazardous cargo.

**15. Regulations**

Identification in accordance with EC directives

The product should be classified and identified in accordance with EC directives/national statute law.

Component(s) to be labelled as hazardous content: 4.4’ methylene-diphenyl-diisocyanate

Hazard symbols

Xn Hazardous to health

Risk phrases

| | |
|---|---|
| 42 | Sensitisation possible by breathing in. |

Safety phrases

| | |
|---|---|
| 23 | Do not breathe in gas/smoke/vapour/aerosol. |
| 45 | IN the event of accident or feeling unwell summon a doctor immediately (if possible show the doctor this label). |

Special identification of particular components
Contains isocyanates. Follow the manufacturer's instructions.

National regulations

Water contamination class
WGK 1 (to VwVws of 17. May 1999)

GISCODE/PRODUCT CODE
GISCODE: PU 50

**16. Other data**

Markings (*) in the left margin indicate revisions from the previous version.
Intended purpose: Chemical product for building and industry
Risk phrases for the constituent substances listed in chapter 2

| | |
|---|---|
| 10 | Flammable. |
| 20 | Hazardous to health if breathed in. |
| 20/21 | Hazardous to health if breathed in and if comes in contact with the skin. |
| 36/37/38 | Irritates the eyes, breathing organs and the skin. |
| 38 | Irritates the skin. |
| 42/43 | Sensitisation possible by breathing in and by contact with the skin. |
| 51/53 | Poisonous to water organisms, can have long-term polluting effects on bodies of water. |
| 65 | Hazardous to health: can cause damage to lungs if swallowed. |
| 66 | Repeated contact can lead to brittle or cracked skin. |
| 67 | Vapours can cause drowsiness and light-headedness. |

The data in this safety data sheet represent our knowledge at the time of publication. They are not warranted as a complete list of characteristics. The only warranty extended is that expressed in the technical data sheets and the general conditions of sale. Consult the technical data sheet before use.

Technical data sheet
Version 12/2005

# Sikaflex®-291

The strongly bonding marine adhesive

Industry

**Technical characteristics**

| | | |
|---|---|---|
| Chemical basis | | 1-component polyurethane |
| Colour | | white, black, natural wood |
| Curing mechanism | | cures by absorbing moisture |
| Density before curing (DIN 53479) | | approx. 1.3 kg/l, depending on colour |
| Stability | | good |
| Processing temperature | | +5°C - +40°C |
| Skin formation time [1] | | 60 min. |
| Through-curing speed | | (see digiagram 1) |
| Volume change (DIN 52451) | | approx. -5% |
| Shore A hardness (ISO 868 / DIN 53505) | | approx. 40 |
| Tensile strength (ISO 527 / DIN 53504) | | 1.8 N/mm² |
| Elongation at break (ISO 527 / DIN 53504) | | approx. 400% |
| Tear propagation resistance (ISO 34 / DIN 53515) | | approx. 6 N/mm |
| Glass transition temperature (ISO 4663 / DIN 53445) | | approx. -45°C |
| Operating temperature<br>short-term | sustained<br>4 hours<br>1 hour | -40°C to +90°C<br>160°C<br>180°C |
| Storage life (storage at less than 25°C in unopened containers) | | 12 months |

[1] 23°C / 50% r.Lf.

**Description**

Sikaflex® 291 is a stable 1-component polyurethane sealant developed for boatbuilding and shipbuilding.
On exposure to atmospheric moisture it reacts to become an elastomer.
Sikaflex® 291 satisfied the requirements of the International Maritime Organisation (IMO).
Sikaflex® 291 is manufactured in accordance with the ISO 9001/14001 Quality Assurance System and the Responsible Care Programme.

**Product advantages**

- 1-component
- flexible
- low odour
- resistant to ageing and weather
- non-corrosive
- can be painted over
- can be sanded
- broad bonding spectrum
- electrically non-conductive
- resistant to seawater and hydrolysis

**Application Range**

Sikaflex® 291 is a versatile product for use in boatbuilding and shipbuilding to make flexible and vibration-resistant seals in internal and external areas. Sikaflex® 291 has strong bonding properties to the principal materials used in shipbuilding. Suitable substrates include wood, metals, primers and paint finishes (2-component system), ceramic materials, plastics (UP-GFK etc.). Sikaflex® 291 should not be used for sealing plastics that are subject to stress cracking (such as PMMA, PC etc.).
For timber decking we recommend Sikaflex® 290 DC. In the cured condition, Sikaflex® 291 can be sanded without problems.

**Curing mechanism**

The cross-linking reaction of Sikaflex® 291 occurs in the presence of atmospheric moisture. At lower temperatures the water content of the air is less and the cross-linking reaction proceeds somewhat more slowly (see diagram).

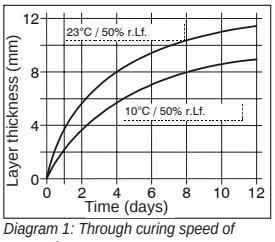



*Diagram 1: Through curing speed of Sikaflex® 291*

**Chemical Stability**

Sikaflex® 291 is resistant to fresh water and salt water, hard water and effluent from public drains including aqueous surfactants, dilute alkalis and acids; short-term resistant to fuels, mineral oils including vegetable and animal oils and greases, not resistant to organic acids, alcohol, stronger mineral acids and alkalis or solvents. This information is intended only as a general indication. Advice for specific applications is available on request.

**Processing instructions**

*Substrate preparation*

The surfaces to be bonded must be clean, dry, and free of dust and grease. Data on preparation of materials surfaces can be found in the primer table for Sikaflex® marine systems.

*Processing*

Break the cartridge membrane and fully open it. Insert the bag into the application gun and cut off the clip. Cut off the tip of the nozzle to suit the crack to be filled, and apply the sealant with a suitable manual, battery-powered or compressed air piston gun into the crack, leaving no air bubbles. Opened containers must be used up within a few days. The processing temperature must not be below 5°C or above 40°C. The optimum temperature both material and sealant is beween 15°C and 25°C.

For advice on selection and arrangement of a suitable pump system, please contact the System Engineering Department at Sika Industry.

*Smoothing off*

Smoothing off must be performed within the skin formation time of the adhesive. We recommend Sika® N smoothing off agent. Other smoothing off agents should be checked for suitability before use.

*Removal*

Uncured Sikaflex® 291 can be removed from equipment and tools with Sika® Remover 208. Cured material can only be removed machanically. Hands/skin should be cleaned immediately with Sika® Handclean or a suitable hand cleansing paste and water. Do not use solvents!

*Painting over*

After the skin has formed, Sikaflex® 291 can be painted over. The suitability for painting over must be trialled prior to application. Powder coating points may be applied only to fully cured Sikaflex® 291. It should be borne in mind that the hardness and film thickness of the paint finish may affect the expansion of the plastic and lead to cracking.

**Additional information**

The following documents are available on request:

- Safety data sheet
- Primer table for Sika marine systems
- General guidelines for working with Sikaflex® adhesives and sealants
- Marine handbook

**Containers**

| | |
|---|---|
| Tube | 100 ml |
| Cartridge | 310 ml |
| Bag | 400 ml |

**Important**

When handling our products, please read the material-specific safety data sheets for their essential physical, safety, toxicological and ecological data. The applicable regulations, such as the hazardous substances regulations should be complied with. On request we will send you our system data sheet TM 7510 „Instructions for protection at work“ for handling Sika Deutschland GmbH products.

**Note:**



Additional information
Internet: www.sika-industry.de, e-mail: industry@de.sika.com
www.sika.com

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Tel. +49 7125 940-761
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# The operating manual for the

# CAP 600

If, despite studying this operating manual, you still have questions about getting started with the unit or using it correctly, or if unexpected problems occur, please contact your specialist dealer.
The Kathrein Customer Hotline is also at your disposal. Phone: +49 8031 184-700

**The automatic updating of the EPG data described in the UFS 740sw operating manual as occurring at 03:00 in the morning is not performed automatically when the UFS 740sw is being operated on the CAP 600! The EPG data are updated when an individual channel is viewed. At this point however the receiver updates all EPG data for the channels that are broadcast from the currently selected receiving transponder.**

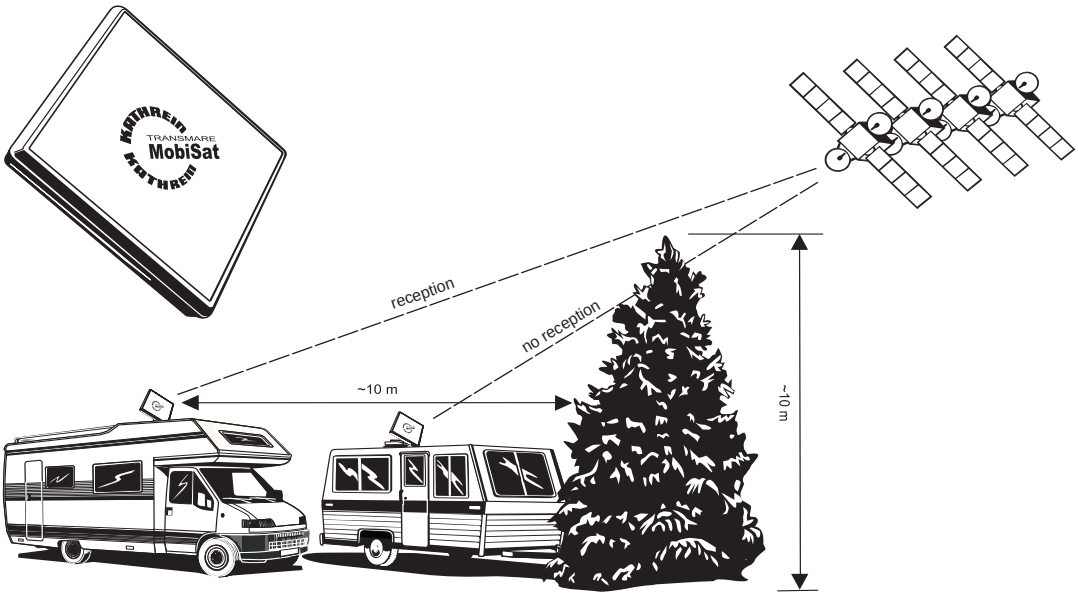
**Example: You have selected the channel “SAT.1”. At this point for instance the EPG data will be updated for “ProSieben” and “KABEL1”.**

# IMPORTANT INFORMATION FOR CAP 600 BEFORE SETUP

**This section of the UFS 740 operating manual for the turntable assumes that the UFS 740 and the turntable have been properly installed and connected, as described in the installation and operating manuals!**

**If you have not yet done so, read the safety instructions at the beginning of the UFS 740sw operating manual and follow them when handling the UFS 740sw and the turntable!**

**Before setting up your satellite system, make sure that the location allows a free view to the satellite positions to the South and is not shadowed by trees or other obstructions. This will save you time and effort!**




## REMOTE CONTROL

All settings on the UFS 740 are made using the remote!

# FIRST INSTALLATION

**Before using your unit for the first time, read the “Safety Instructions - Important Information” and “Installation and Connection” sections.**

**You will find a sample configuration for a motor home in the Section “Installation and Connection”, “Connection Example”.**

**Do not connect the unit to the power supply until all installation work has been properly carried out.**

**The guidance given in the “First Installation” section assumes that the receiver has been properly connected, as per the “Safety Instructions - Important Information” and “Installation and Connection” sections.**

First switch your TV set on and select the AV channel slot. Switch on your receiver at the power switch on the front of the unit. The following display appears:

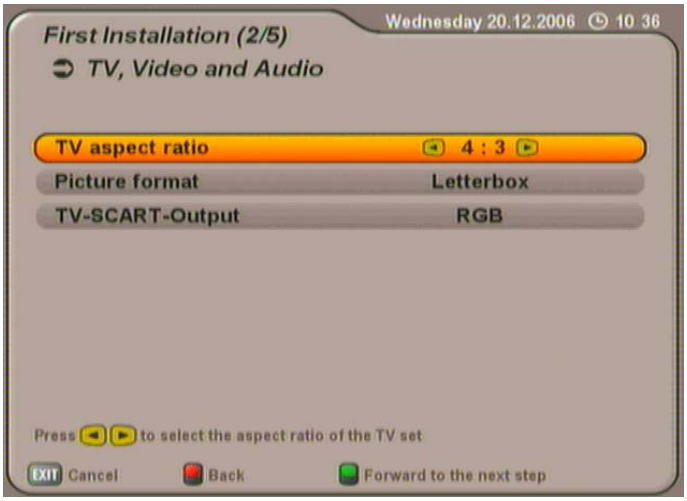

Also pay attention to the bars at the bottom of the on-screen display! These provide information on what to do next.

Select the menu language you want using the ▼▲ buttons. Available options: German, English, French, Italian, Spanish, Czech, Dutch and Turkish.

Press the PIP (green) button to move to the next menu.

**Note:** *If you are unsure whether you chose the right option from a previous menu, you can go back a step at any time during the First Installation process by pressing the FAV (red) button.*

The following display appears:




Use the ▲▼◄► buttons here to select the settings for your TV set.

**When doing this, refer to the operating instructions for your TV set!**

**TV aspect ratio**
Here you select the TV's picture format. Either

4:3 or
16:9

**Picture format**
Here you select the type of screen display, depending on the setting of your TV format:

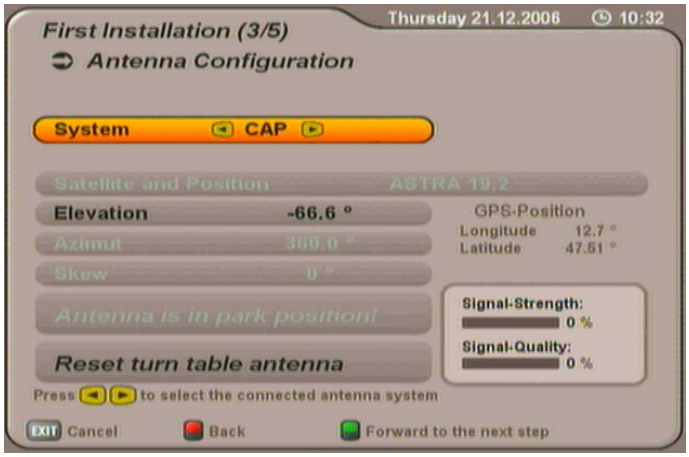
- TV format “4:3”: Pan & Scan or Letterbox
- TV format “16:9”: Always 16:9 or automatic

**TV-SCART-Output**
Select the type of video signal at the TV Scart socket here. Select the signal that your TV set can process.

- CVBS – Colour Video Baseband Signal
- RGB – Red/Green/Blue signal or
- Y/C – S-Video signal (luminance/chrominance)

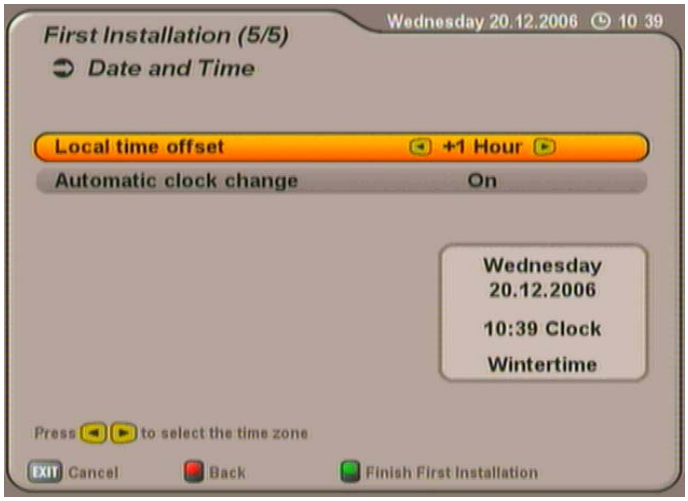
Press the PIP (green) button to move to the next menu.

The following display appears:




**System**

Use the ◄► buttons at “System” to select “CAP 600”. Then press the PIP (green) button twice (Channel scan “item 4/5” is skipped). The following display appears:




**Local time offset**

Use the ◄► buttons to set the time zone variation from UTC (formerly GMT) (e.g. for Germany +1 hour).

Use the ▲▼ buttons to switch to the “Automatic clock change” field. Use the ◄► buttons to select whether the receiver should automatically change over between summer and winter time. If “On” is selected, the receiver automatically sets itself to the right time. If “Off” is selected, the field for manual selection of summer and winter time is displayed below.

Press the ◄► buttons to perform the setting.

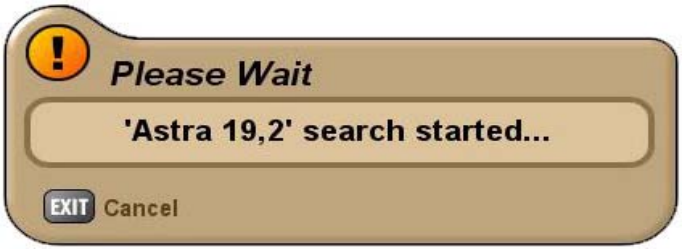
Press the PIP (green) button to close first installation and return to the main menu. Press the EXIT button to view the TV picture.

# ALIGNMENT (SATELLITE SEARCH)

The antenna is aligned automatically. After the UFS 740 has been switched on, the turntable automatically moves to the last channel received and the associated satellite position (e.g. ARD/ASTRA).
This works because every satellite broadcasts its own identification signal, which is automatically identified by the turntable.
The satellite search is started when you select a channel. If the turntable has not yet saved the position of the satellite, you will see the following display when you select a channel (example):

**If the vehicle is not on supports during the search process and people are moving around inside it, there is a risk that movement of the vehicle will mean that the satellite is not found.**


Press the OK button to start search mode.
The search may take a few minutes (generally about four minutes). You will first see the following message:




As soon as the turntable has found the correct satellite, automatic fine-tuning is carried out (and if the signal level is sufficient, the satellite position is immediately saved by the turntable). The screen may “freeze” during fine-tuning – this is determined by the system.

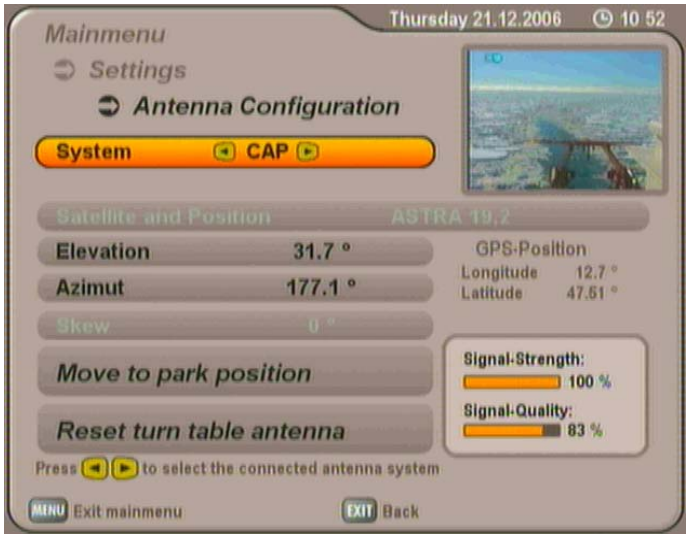
The set position (of the satellite that was found) is saved and the desired channel appears on the TV screen.

# ALIGNMENT (SATELLITE SEARCH)

## MANUAL CORRECTION

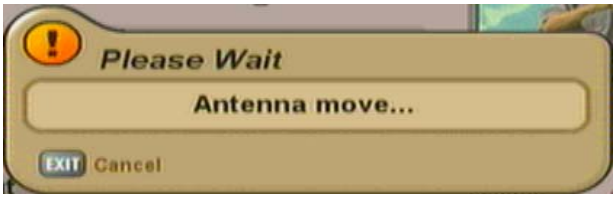
At the margins of the footprints of a satellite (e.g. after a slight change of position), it may be necessary for you to manually correct the setting (not normally required). It is also possible to manually correct the fine tuning.

Press the MENU button to return to the main menu. By using the ▲▼ buttons and the OK button you can call up sub-menus (“Settings”, “Antenna Configuration”).




You can correct the inclination and horizontal angle of the antenna using the “Elevation” and “Azimuth direction” settings. To do this press the ◄► buttons or enter a numeric value using the numeric keys and confirm with OK button. Check your settings by referring to the “Signal-Strength” and “Signal-Quality” bars on the right-hand side. The higher the bar, the stronger and better quality the signal received.

**The new co-ordinates are not assigned to the satellite until you have saved the satellite position when exiting the “Antenna Configuration” menu!**




When you have performed the correction, press the EXIT button to exit the menu. You will be asked whether you wish to save the changes.

Press one of the ▲▼ buttons (“Yes, save the changes” or “No, don’t save changes”) and confirm by pressing the OK button.

# CHANNEL (SATELLITE) SELECTION

By pressing the P+/P- buttons all channels can be selected in the sequence that they appear in the current channel list and its sorting. Press the TV/R (blue) button to switch between TV and radio channels.

## CHANNEL SELECTION FROM THE CHANNEL LIST

Providing you are not in a menu, pressing the OK button calls up the channel list. The following display appears:

Also pay attention to the bars at the bottom of the on-screen display! These provide information on what to do next.


Calling this up displays the channel selection / sorting list from which you selected the last channel.
At the top right you will see the selected channel list (TV or radio channels) displayed.

Press the TV/R (blue) button to switch between the TV and radio channel lists.

To the right of it you see the current channel list sort order as selected by you.
The channel list can show channels sorted by various selection and sorting criteria.

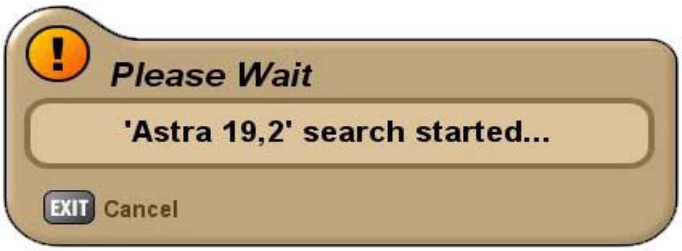
The cursor buttons (▲▼◄►) are used to navigate within the respective channel list view to select the desired channel. The selection of the desired channel is confirmed by pressing the OK button. As soon as the turntable has found the satellite or has reached the known position, you will now hear and view the currently selected channel in the small window at the top right. To exit the channel list and return to the TV picture, press the OK button again, or press the EXIT button.

**Note:** *A comprehensive explanation of the channel list with its detailed functions (e.g. the scan and sort function) can be found in the UFS 740sw operating manual.*

# CHANGE OF LOCATION/TIMER PROGRAMMING

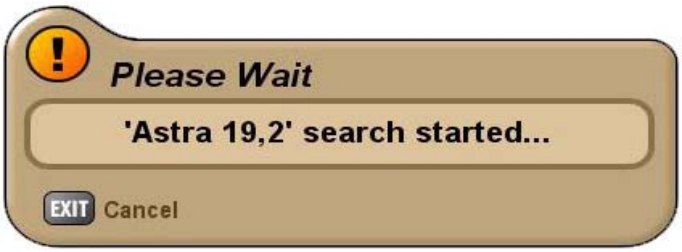
After a change of location, the antenna moves to the last position selected. After initialisation, you will therefore see the following display (example, as it depends on the last selected position):

**For slight changes of location, the antenna can find the satellite very quickly.**




If no signal is found at the last position, the following message appears:


If you still want to aim at the satellite, press the OK button to start the search.




If a signal is found, the antenna automatically goes into fine tuning mode (max. 90 seconds, if signal is adequate the position is immediately saved).

## TIMER PROGRAMMING

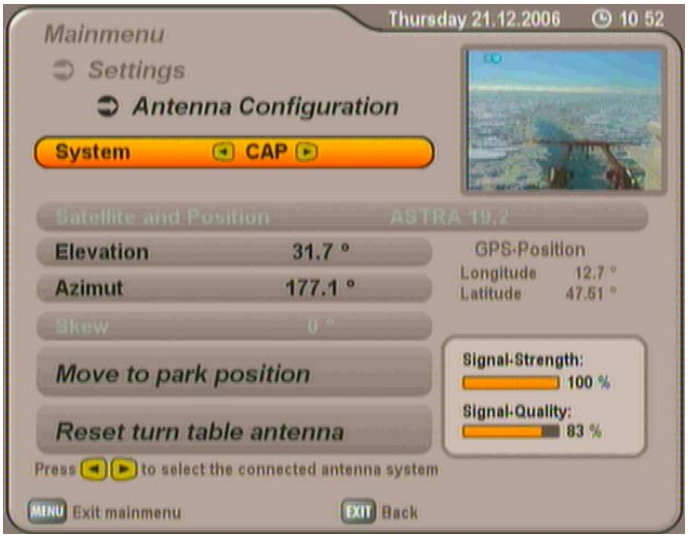
See the UFS 740sw operating manual for details of how to program the timer. When using the UFS 740sw on a CAP 600 please note the following additional instruction:

**To prevent the turntable rotating at a time when it is unsupervised or when rotation might be irritating (e.g. in the middle of the night), a timer can be set. During the timer period the turntable is active only if the UFS 740sw is in operation or is in standby mode.**
**If the receiver is completely switched off (switched off at the power socket) and/or the turntable is in park position, the turntable will be inactive during the timer period! The same applies if during the first movement the satellite position is not found.**

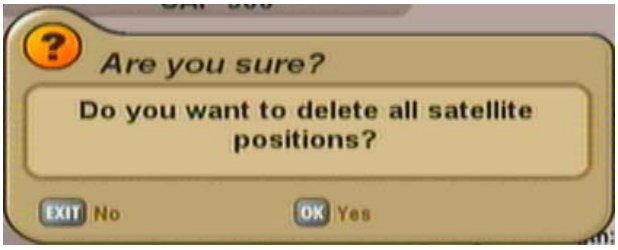
# RESET/PARKING

## RESETTING THE MOTORISED ANTENNA

Press the MENU button to return to the main menu. By using the ▲▼ buttons and the OK button you can call up sub-menus (“Settings”, “Antenna Configuration”).




Use the ▲▼ buttons to move to the “Reset the motorised antenna” menu item and then press the OK button. The following display appears:




Press the OK button to confirm the displayed message. The antenna is reset and automatically moves to park position. A further short message “Park position reached” appears. Press the EXIT button to exit the menu.

**Note:** *Before exchanging any component of the system (such as the receiver) the turntable should be moved to its park position by means of the “Reset the motorised antenna” command. After the “Reset”, all previously saved satellite positions in the turntable are deleted. The satellite data in the receiver component of the UFS 740 are however retained.*

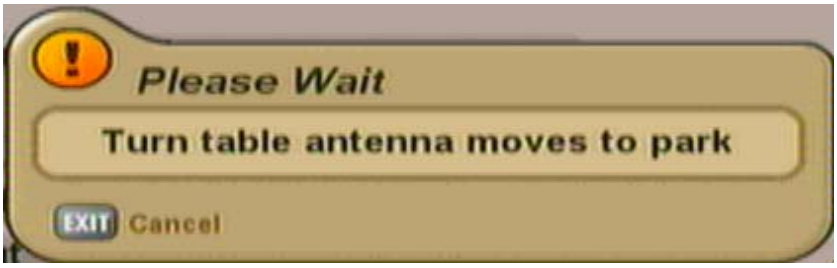
# RESET/PARKING

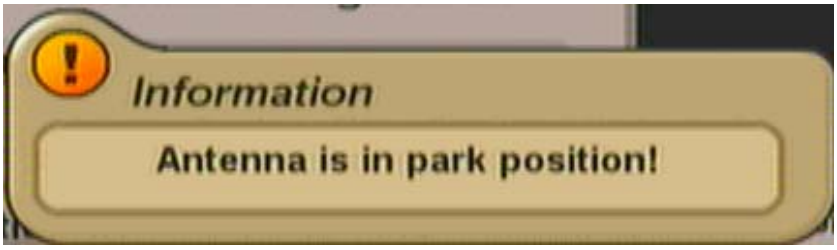
## PARKING THE TURNTABLE

You have three options for “parking” the antenna.

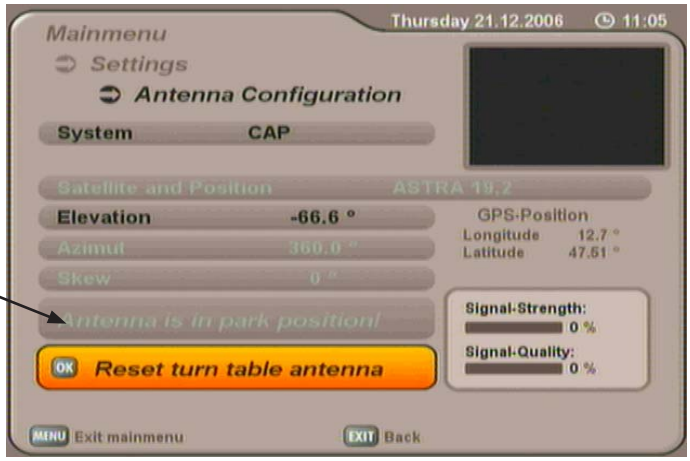
1. The antenna can be moved to park position by pressing the ⏻ button twice.
2. Press the MENU button to return to the main menu. By using the ▲▼ buttons and the OK button you can call up the sub-menus (“Settings”, “Antenna Configuration”). Use the ▲▼ buttons to move to the “Move to park position” menu item. Now press OK to park the antenna.
3. When the ignition is operated, the antenna automatically moves to the park position! However, for this to happen the green wire of the power supply cable must be connected to the ignition (see “Connection Diagram”). Refer to the detailed instructions for this in the CAP unit installation guide.

The antenna is moved to park position, and this is then confirmed.



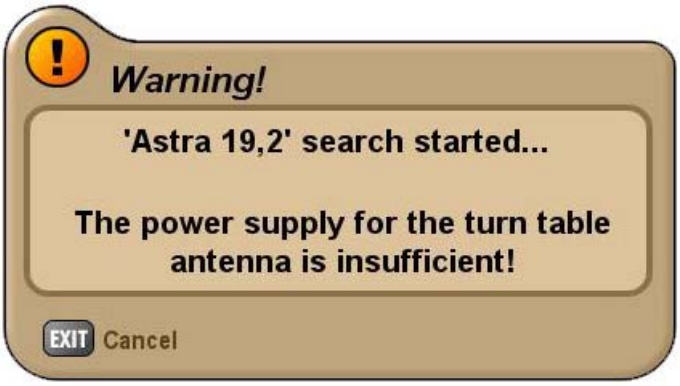

The Antenna Configuration menu allows you to check whether the antenna truly is in the park position.



# SPECIAL MESSAGES FROM THE TURNTABLE

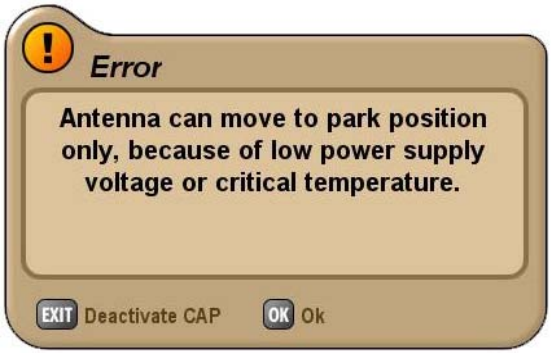
## SYSTEM PROTECTION MESSAGES

The following messages are shown on the screen to protect your reception system and the on-board power supply:



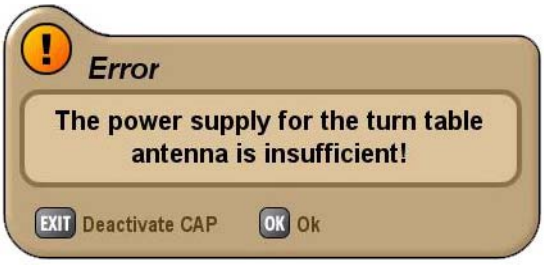

The power supply to the turntable is insufficient (battery voltage below minimum value). The turntable can still be moved, but communication errors can occur between the UFS 740sw and the turntable (e.g. when scanning for satellites).

If the voltage falls still further, both the following error messages are displayed:




Check the power supply to the turntable and whether it is obstructed (e.g. by a branch). If both causes of faults are displayed, the turntable motor temperature is in the critical range. Allow the turntable to stand for a few minutes in its current position, until the turntable motor temperature has reduced. You can also however move the turntable to the park position and let it cool down there.

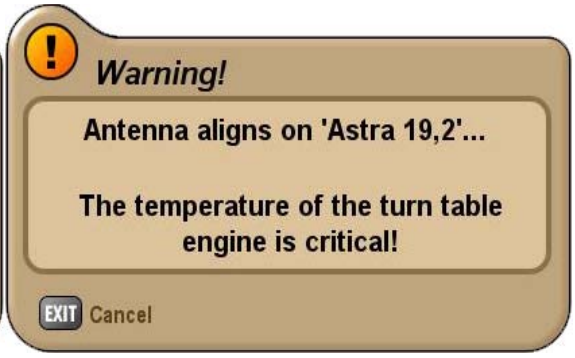
Press the OK button and the turntable will move to the park position.



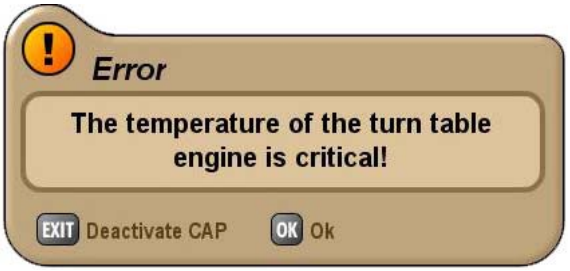

Press the OK button to confirm the displayed message. The turntable cannot be moved any more. Check the power supply to the turntable.

Note: *The antenna should not be moved whilst the battery is being recharged, to prevent peak loads when turning on.*

# SPECIAL MESSAGES FROM THE TURNTABLE


The turntable motor temperature is in the critical range. The controls can move the turntable only to a known satellite position or to the park position. In addition you receive the message “Last Move done” (to allow the turntable motor the opportunity to cool down, no movements of the turntable are permitted for a few minutes).




The turntable motor temperature is in the critical range. The controls permit no further movements of the turntable motor. You must allow the turntable motor to cool down before you can use it again. Now press the OK button and wait a few minutes before using the turntable again.


The vehicle ignition was switched on. For safety reasons, the turntable moves into the park position. This operates however only if the green ignition cable for the turntable is connected to the vehicle ignition!

# SPECIAL MESSAGES FROM THE TURNTABLE


The motorised antenna has reached the mechanical stop or is jammed! Check whether the turntable is obstructed (e.g. by a branch).

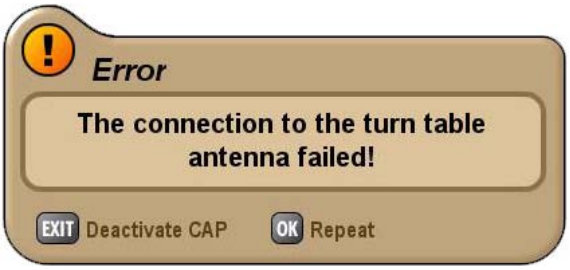
## MESSAGES ARISING FROM SOFTWARE PROBLEMS


A serious software error has occurred. Reset the turntable in the CAP menu, or contact our service centre.

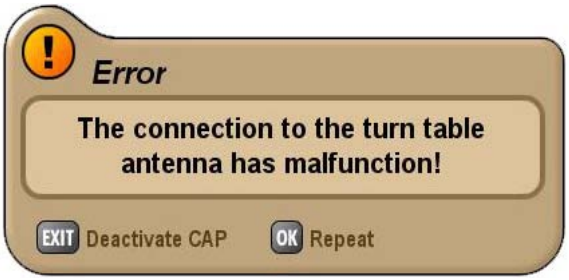

The motorised antenna software is defective. An update is required. Contact our service centre.

# SPECIAL MESSAGES FROM THE TURNTABLE

## FURTHER MESSAGES




The receiver has lost communication with the turntable. Check the connection between the UFS 740sw and the turntable.




The connection to the turntable is defective. Reset the turntable in the CAP menu, check the connections between the turntable and receiver, or contact our service centre.

# DECLARATION OF CONFORMITY

CE

## EC Declaration of Conformity

| | |
|---|---|
| Manufacturer: | **Kathrein-Werke KG** |
| Address: | **Postfach 10 04 44**<br>**83004 Rosenheim** |
| Product designation: | **Sat-Paket MobiSet 2** |
| Type designation: | **CAP 600** |
| Relevant article no.: | **20310018** |

**Kathrein-Werke KG** hereby declares that the designated product complies with the directives of the Council of the European Union for harmonising the statutory regulations of the member states.

1) Electromagnetic Compatibility (89/336/EEC of 03 May 1989)
   The following standards are satisfied:
   EN 55013: 2001 + A1:2003 + A2:2006
   EN 55020: 2002 + A1:2003 + A2:2005

2) Machines (98/37/EC of 22 June 1998)
   The following standards are satisfied:
   EN ISO 12100-1: 2003
   EN ISO 12100-2: 2003
   EN 294: 1992
   EN 349: 1993

Any restrictions on the use of the product should be observed.
See the respective instructions for proper use.

Development, production, quality assurance and sales are based on the EN ISO 9001 standard, certificate register no. Q1 99 10 11297 015 for Kathrein-Werke KG dated 17.10.2000, issued by TÜV PRODUCT SERVICE GMBH.

Place, date: Rosenheim, 04.07.07

legally binding signature:

## FOR YOUR NOTES

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936.3220/-/0907/ZWT - Technical data subject to change.

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